SUPREME COURT OF THE UNITED STATES.

No. 277.

JOHN S. GILBERT AND ZENO SECOR, APPELLANTS,

vs.

THE UNITED STATES.

APPEAL FROM THE COURT OF CLAIMS.

INDEX.

	Original.	Print.
Claimants' petition	1-132	1
Exhibit A	133	85
Exhibit B	134	85
Exhibit C	138	87
Demurrer by United States solicitor	140	88
Final judgment of the court	141	89
Petition of claimants for allowance of an appeal as certified by the court	142	89
Certificate of chief clerk Court of Claims	145	91

1 U. S. Court of Claims.

JOHN S. GILBERT and ZENO SECOR
agst.
THE UNITED STATES.

To the honorable the judges of the United States Court of Claims.

The petition of John S. Gilbert and Zeno Secor respectfully resents:

That these claimants, and such other person and persons who have a contingent interest therein, are citizens of the United States, and each of them has, at all times, borne true allegiance to the government of the United States; and that neither of them has in any way voluntarily aided, abetted, or given encouragement to rebellion against the said government of the United States.

And these claimants further show that by an act of Congress, approved March 3, 1847, (sec. 1, chap. 48, vol. IX, page 170, Statutes at Large,) the Secretary of the Navy was directed as follows, to wit:

"To cause to be constructed at each of the navy yards at Kittery, Philadelphia, and Pensacola a floating dry dock for ships-of-the-line, with basin and railways at Philadelphia, and reference thereto at the other places, on such plans as may be preferred by the Secretary of the Navy. The said dock at Pensacola to be completed with all possible despatch; and the sum of fifty thousand dollars is hereby appropriated towards said dock at Kittery; fifty thousand dollars towards said dock at Philadelphia, and two hundred and fifty
2 thousand dollars towards said dock at Pensacola, out of any money in the treasury not otherwise appropriated."

And these claimants further show that the Secretary of the Navy, in pursuance of the aforesaid act of Congress, invited proposals, plans, and specifications for the construction of the works therein specified, from different parties, to be submitted to the Navy Department for examination, which said invitation was in the words and figures following, to wit, a communication from Commodore Joseph Smith, U. S. N., Chief of the Bureau of Yards and Docks, to one of these claimants, John S. Gilbert:

BUREAU OF YARDS AND DOCKS, 19 *March*, 1847.

John S. Gilbert, esq., New York:

SIR: In order to execute the law approved 3d March, 1847, authorizing the construction of a floating dock at each of the navy yards at Pensacola, Philadelphia, and Kittery, (Me.,) and preparatory to deciding upon the plan which the department will adopt, the Secretary of the Navy has directed me to request you to submit proposals for the construction of a dock at each of said navy yards upon your plan of dock, known as the "balance dock."

First. A plan with specifications and estimates in detail, of the kind and quality of materials, both wood and of iron, and amount of labor, of a dock of dimensions, power, and capacity sufficient to raise and sustain for repairs a ship-of-the-line of displacement equal to

5,300 tons, or one of the largest steamers of 300 feet in length and 70 feet breadth over the guards.

Second. A statement in detail of the amounts for which you will enter into contract to construct and put into successful and satisfactory operation at the navy yard, Pensacola, a dock both of wood and of iron of the above capacity, if of wood, to be copper-fastened and sheathed with 32-oz. copper, furnished with all the steam engines, pumps, machinery, and fixtures of every description which may be necessary for its successful operation; the shortest period of
3 time in which you will complete such a dock at said yard, and warrant its successful and satisfactory operation in raising ships of the largest class.

Third. A similar statement, in detail, of the amounts for which you will construct and complete, within the term of two years from the 1st of August, 1847, a similar dock at each of the navy yards at Philadelphia and Kittery, (Me.,) and warrant their successful and satisfactory operation in raising ships of the largest class.

Fourth. The additional amount, if any, which you will demand to warrant the complete and satisfactory performance of the dock, when used as a camel to raise a vessel of the dimensions above stated outside of the bar at Pensacola, and transport her over the bar to the harbor, and vice versa; and also how much of the whole amount for said dock you will forfeit in case of failure of the dock to act as a camel for said purposes.

Fifth. A similar plan, specifications, and estimates in detail for a basin and railway at each of the said yards, with all the steam engines, hydraulic cylinders, pumps, engine houses, hauling beams, and all other machinery and fixtures of every description which may be necessary for taking a ship of the largest class from the dock to the land, and vice versa, to be satisfactorily completed and used within two years from 1st of August, 1847.

Sixth. The price asked for the patent right only for the construction by the government of your dock, called the "balance dock," for either one or all of said navy yards, and how the payments are to be made in each case.

Seventh. The bonds and security you will be prepared to give in either case, should the department accept your proposals, or accept your plan of dock.

If you are disposed to furnish the above information, please state how soon it may be expected, as the department desires to progress with the work without delay.

Respectfully, your ob't serv't,

(Signed) JOS. SMITH.

4 And these claimants further show that on the 5th day of May, 1847, one of these claimants, John S. Gilbert, for himself and associate, submitted the following plans and specifications for the construction of said dry docks, with basin and railway:

SPECIFICATIONS OF THE BALANCE DOCKS PROPOSED TO THE GOVERNMENT.

NEW YORK, *May* 5, 1847.

Commodore Joseph Smith, Chief of the Bureau of Yards and Docks:

SIR: In reply to your letter of 19th ult., I beg leave to state that I presume I shall best satisfy the objects of that letter by proceeding to describe in detail the mode in which I propose to construct the docks required by the government.

Specification for a balance dry dock (of wood, oak or yellow pine, first quality, as may be procurable in the respective sections of country the where several docks are required) for ships weighing 5,300 tons, and steamers of 300 feet in length, adapted to perform the functions of a camel capable of taking up such ships outside of bars in ordinary weather and floating them any distance into harbor, and vice versa.

The balance dock being a vessel, the description of its parts will be in the ordinary terms employed by shipbuilders.

Dimensions.—The outside dimensions at the top will be 300 feet in length by 100 in breadth; the depth being 38.

Foundation platform.—The first thing done will be to lay the foundation platform, which is that part of the structure which answers to the planking on the flat of a ship's bottom. This platform will be 260 feet long by 90 wide, and will be composed of three layers of timbers, each one foot thick, and each made tight independent of the others, so that the whole will be three feet in thickness.

The courses of timber which form the first or lowest layer of the platform, will be made alternately in two and three lengths; first, one piece 50 feet long, with one of 45 feet, which will allow for a five feet vertical hook scarf; and then two pieces of 35 each and one of 30, which will afford the same allowance for scarfing. Lying close together, bolted together laterally, and caulked down from the top with wedges of soft wood, which will extend down four inches into every seam, made by the scarfing or otherwise; these courses of timber will form a water-tight platform. The top of this layer is then covered with felt, well laid in tar.

The next or middle layer is also of 12 by 12 timber, running not transversely as before, but longitudinally. It is composed of scarfed pieces, of from 30 to 60 feet in length, laid, as before, close together, bolted both laterally and down to the lower clamps, and caulked and overlaid with felt and tar as before.

The third or upper layer is in all respects like the first, being, moreover, bolted down through and through, and all the bolts being riveted on the under side. It falls short one foot on each side, in order to allow the side timbers of the dock to pass down.

The platform thus constructed, answers in every respect to the planking on the bottom of vessels built in the ordinary mode of naval architecture. It is my "patent clamp bottom," and is presented as a combination of materials in such a manner that it is impossible in

the nature of things for it to be made to leak; there being two tight transverse seams (those of the upper and lower layers) which could not be at all affected by any transverse bending of the platform, and one tight longitudinal seam which could not be at all affected by any longitudinal bending; this last being also a neutral line between the upper and lower clamps. The platform being put together
6 by building up from the bottom, it can, of course, be repaired, if required, from the upper side, as well in the water as an ordinary ship can be on the land, the order of naval architecture having been in the commencement reversed.

The pumps are so arranged that they cannot draw all the water off; so that this platform will be always submerged, and consequently preserved from rot through all time.

The sides and ends are next built up as far as 8 feet high, with timber 12 inches thick, the ends flaring outward, with a curve, at such angle as to make the length of the dock 300 feet at the height of 14 feet, and the same being supported at the bottom with knees of a corresponding angle. The sides will flare outward 5 feet in the whole height. Sketches of a longitudinal and a transverse section may be seen in drawings No. 1 and No. 2.

The whole under surface, and that portion of the structure which will be immersed by its weight, is next covered with felt well laid in tar. In order fully to carry out the balance plan of dock as contemplated by its inventor, we think it desirable to vary from the directions indicated in the letter of the bureau so far as regards the thickness of the copper sheathing on its bottom and sides as far up as, say 6 feet, on the part of the dock we shall put 42-oz. copper sheathing, fastened with 2½-inch copper nails. The copper sheathing to be continued up to 14 feet on the sides and ends of the outer walls with 32-oz. copper.

The structure is then launched, and built up and finished in the water. But it should be borne in mind, that the platform thus completed and made equivalent to one solid continuous mass of timber three feet thick, is intended to answer merely to the planking on an ordinary ship's bottom, and is not relied upon as furnishing any more strength to the structure than does the planking on the flat of her bottom afford to the ordinary ship. This part of the dock will never decay, and therefore we sheathe it with copper that will last as long as the superstructure, which we suppose to be thirty years.
7 The rebuilding of the top work and the recoppering of the bottom would, if our calculations be correct, both be necessary at the same time. Having removed the superstructure, the bottom will be hauled on the land on temporary ways.

The frame.—The frame will then be put together, consisting of the floor timbers and the ribs.

Floor timbers.—The floor timbers are made in that form of solid truss beams used in the hydraulic dock in the city of New York, and are 2 feet broad and 3 deep, extending across the open space in the middle of the dock, and into the side chambers 6 feet on each side, making their length about 60 feet. They are 2 feet apart,

or 4 feet from centre to centre; making in all 65 in number. They are bolted down upon the platform, each bolt passing down 2 feet into the solid work below. In connexion with the upper clamps, they afford to the middle of the dock a strength fully adequate to sustain the ship, even without the aid of the water. See drawing No. 1.

Ribs.—The ribs of the sides and ends are 12 by 12 scantling, placed one foot apart in the clear. They are 36 feet long.

The inner ribs, that form the frame of the sloping sides of the side chambers, are likewise 12 by 12 scantling. They start from the platform on a line not less than 23 feet from the centre of said platform, and will be laid so as to intersect the upright or outer ribs at the height of 14 feet above the keel blocks. Like the latter, they are also one foot apart in the clear.

Outer ribs.—The said upright or outer ribs are slip-dovetailed into the ends of the upper clamps of the platform, and copper-bolted ($\frac{7}{8}$-inch) and trenailed through the thick work of the sides, the bolts being clinched. They are supported at their heels by stringers bolted down upon the platform.

Inner sloping ribs.—The ribs of inner sloping side walls are secured to the truss-beams; and each alternate one is dovetailed
8 into the upper clamps of the platform. They are also backed, inside of the chambers, with massive stringers running along on the tops of the truss-beams. See drawing No. 1. There are also stringers bolted along the inside of the middle compartment of the dock, to support the heels of the sloping ribs against the lateral pressure of the water from without. All these stringers are 18 inches square, running the whole length of the dock.

Each sloping rib is backed and supported by a stanchion sloping into the side chambers in a reverse direction to the said ribs, and at right angles therewith. See drawing No. 1. These stanchions are fastened at their top ends to stringers running the whole length of the dock; and at their lower ends to stringers bolted down upon the platform. Between these upper and lower stringers, and connected with said stanchions, is a line of lattice or ordinary diagonal bracing; which, in connexion with the planking on the inner slope, forms what may be termed a sort of backbone to the said inner sloping wall, its object being to strengthen the perfect rigidity of the dock longitudinally; at the same time contributing to transmit in the opposite directions, so that they meet and counteract each other, the outward pressure of the ship's weight and the upward and inward pressure of the water. There is a similar system of longitudinal lattice bracing, for the same object of longitudinal rigidity, connected with the upright ribs of the outside wall, and passing between lines of stringers 12 by 18 at top, and 18 by 18 at bottom; this bracing being of 12 by 4 scantling.

Transverse bulk-heads.—Across the side chambers are solid bulk-heads 12 feet apart, dividing them into separate water-tight compartments; each bulk-head having an opening at its bottom, furnished with a gate for the passage of the water. Between the said bulk-heads, there is also a system of transverse diagonal bracing, at equal distances of 4 feet, which will support both the outer and inner

walls. The outside or upright ribs are planked up, to the
9 height where they are met by the sloping ribs, with 6-inch plank, and caulked with oakum in the ordinary way. The sloping ribs are planked up with the same, alternately with at hicker streak, in such a manner that every alternate course will form a step or altar to receive the shores. See drawing No. 1.

Upper or air chambers.—The above completes the description of the construction of the lower chambers, designed for the admission of water. The upper or air chambers are 10 feet wide across at the top, their inner walls being perpendicular, and their outer walls consisting of the outer ribs of the dock already described. There is thus afforded a clear inside width of 80 feet. The said inner walls are formed by upright stanchions, 12 by 12, fitting in between the sloping ribs of the lower chambers; they extend down to the platform, and secured at their heel by stringers bolted along the said platform, and against supported by stringers bolted on the upper sides of the sloping ribs, as will be seen in drawing No. 1. They are then planked up with 3-inch plank.

Decks of the chambers.—The tops of the chambers are decked over with 3-inch planks; the deck beams being 5 by 5 scantling, so laid as to form diagonal horizontal bracing.

Windows.—There are 5 or more openings, 10 by 15 feet square, through the upper chambers, for convenient passage of timber, &c., with sliding shutters on the outside. See drawing No. 2.

Gates.—The gates at both ends are of wrought iron, in $\frac{1}{2}$-inch plates; they are in two parts or flaps, the lower of which extends up as far as the flare of the ends of the dock, at which point the upper flap joins it, and turns upon a joint extending through its whole length. The trussing to give strength to these gates is hollow, so as to afford a buoyancy equal to their entire weight. This trussing will contain the same amount of iron as the body of the gate.
10 At one end of the dock the gate will be 74 feet wide, at the other end 50 feet. There will also be an iron boat-gate, to shorten the dock or divide it into two compartments.

The engines.—The engines are horizontal, running lengthwise, of 18 horse power each; and driving 12 pumps of $1\frac{1}{2}$-foot diameter, and 3 feet stroke. They are fitted with capstans and windlasses for opening and closing the gates, and for hauling in and out the ships, together with chains and all other necessary machinery.

The dock will be furnished with solid sliding chocks, such as are in common use, which will be made to support the ship at the ends of her floor timbers, at distances varying from 8 to 12 feet. It will also be furnished with three galleries on each side, supported by knees or braces on which the workmen may stand and shore the ship as the water leaves her; it will also be furnished with horizontal centering beams, as may be seen in drawing No. 1. In addition to these supports, any number of shores may be placed between the sides of the ship and the altars along the sides of the dock, as fast as the water leaves the bottom of the ship. The engines will stand on decks raised five feet high, they will be enclosed in good houses, and

there will be a railing around the dock five feet high. The dock will be planed smooth, and well painted, and finished in all respects in a workmanlike manner, having all the apparatus necessary for its perfect operation in docking the largest ship weighing 5,300 tons gross.

The dock, being finished, will be ballasted down so that its displacement shall be 3,500 tons; the ballast being so deposited and arranged that the greater part of it will be at the ends of the dock. It will take up a ship drawing 25 feet in 31 feet water, and the weight of the dock and ship together being 10,600 tons, it will float in about 14 feet water when pumped out. Its structure will bear a depression of 28 feet water, which is double that required.

11 SPECIFICATIONS FOR IRON DOCK.

The iron dock will be of the same form and dimensions as that of wood. The bottom and sides, as high up as four feet, will be constructed upon the land in the ordinary mode of steam boiler making, and will be composed of plates of iron half an inch thick. It will be strengthened transversely by iron ribs or floor-beams, three and half feet deep in the middle, and two feet at their ends, made of two thicknesses of three-eighth-inch plate iron, laid vertically on edge with crossed butt joints, making their thickness three-fourths of an inch. They will be fastened to the bottom by flanges turned on both sides, where the sheets but, an iron battan six inches wide is riveted on to support the joint. The floor-beams will be four feet apart from centre to centre. It will then be launched, and finished in the water.

The lower chambers will be made of plates of iron three-eighths of an inch thick. They will have a tight flooring resting upon and fastened to the upper edges of the transverse ribs of the bottom above described, and to the portion of the sides already constructed before launching. The ribs of both the outer and sloping walls will be of three-eighth-inch iron, six inches wide, to the height of the lower chambers; above that height they will be three inches, and placed two feet apart, with bracing between them equal in weight to all the ribs, and so arranged as to give the greatest strength. The form of the sloping walls is exhibited in drawing No. 3. The solid partitions, or bulk-heads, across these lower chambers will be of three-eighth-inch iron, twenty-four feet apart.

The upper or air chambers will be enclosed with iron of one-fourth inch in thickness. They will be supported by bracing equal in weight to all their ribs.

The gates, with all fixtures and conveniences, will be the same as above described for the docks of wood.

12 Between the iron ribs or floor-beams of the bottom of the dock, we propose to place truss-beams, of the same kind and dimensions as those above described for the docks of wood, so that two of them will fill in all the space between two of the iron ribs. These truss-beams will be hung in stirrups made of iron seven inches wide by one thick, hanging on the tops of the iron ribs, so as to

allow the truss-beams to barely touch the bottom of the dock, and thus distribute the weight over the platform. (It has been said that this combination of wood and iron is faulty in principle, because the truss-beams are more elastic than those of iron with which they are to act in concert, and that the iron and wood beams would "break in detail." I apprehend, that the truss-beam is, on the contrary, less elastic than the iron beam, and that it cannot bend at all unless the weight upon it be great enough to either tear asunder, lengthwise, the lower piece (1) in drawing No. 2, or to crush the upper piece, (2.) At all events, it is known that similar truss-beams, of the dimensions given, have been tested by a force equal to one hundred tons without bending, the beams being supported only at their ends, forty-three feet asunder, and the weight being applied at the middle.)

A smooth floor of three-inch plank will be laid over the truss-beams, and twelve lines of stringers, 12 by 12, will be bolted along the whole length of the middle of the dock.

SPECIFICATIONS FOR DOCKS OF REDUCED DIMENSIONS FROM THE ABOVE.

The preceding specifications describe docks of the highest degree of massiveness and strength, being such as we would propose to build at Pensacola, where they may be said to be required to go to sea. For Philadelphia and Kittery there is no need of any such degree of massiveness; for those places, therefore, we propose to reduce the quantity of material to be put into the docks, leaving them still possessed of an ample abundance of strength for all the purposes to be required of them at those stations.

13 The docks will be of the same length, and eighty-five feet wide at the bottom; the depth will be thirty-six feet, out to out. The upper chambers will be eight feet, leaving seventy-nine feet wide in the clear between them. The ribs will be eighteen inches apart; the truss-beams will rise but two feet above the upper clamps, and the said upper clamps will be only placed underneath the truss-beams. The clamps between the said beams being dispensed with. The depth of timber (in docks of wood) below the keel-blocks will thus be five feet instead of six as above.

The engines will be of twelve-horse power, and the number of pumps (of the dimensions above specified) twelve; instead of three feet stroke they will have but two feet. The capstans and one-half of the number of sliding chocks will be dispensed with.

Inasmuch as there are no worms in the waters of the Delaware or at Kittery, and as the circular of the bureau does not indicate that those docks are to be coppered, we propose to dispense with the copper in our proposals for those two docks; substituting therefor, at Kittery, as in the dock now building at New York, felt and tarred sheathing.

The reduction of material employed in the iron docks, leaving them amply sufficient in strength for those stations, will be the same as is indicated in these reduced dimensions for wood. It is not considered necessary to go into more minute detail on this point, because fixing

by the pound the price at which we offer to contract for iron docks, the department will have it in its own power to determine the precise amount of material and consequent strength it will prefer to have put into them. The highest degree of strength, such as we have proposed for the Pensacola station, may not be deemed by it superfluous for the others also, though we consider the lesser dimensions above indicated as amply sufficient for either of the latter places.

14 SPECIFICATIONS FOR BASINS AND RAILWAYS.

The stone basin (for a single railway) will be 110 feet wide by 310; having on three sides walls of cut stone masonry 14 feet high, 6 feet thick at bottom, and 3 feet at top, battering three feet in the whole height. The depth of water in this basin at high water will be 10 feet. The bottom of the basin will be formed of piles driven 4 feet apart and capped with timber and five-inch planking, secured to them in the firmest manner. The platform will be caulked with wedges of soft wood. Five or six courses of hewn granite, 12 by 12, will be laid in cement upon the platform, in the direction of its length, forming level projections, or granite stringers, on which to rest the dock; the spaces between the courses of granite being filled with concrete, 6 inches thick.

There will be an iron boat-gate to close the outer end of the basin; which will admit of pumping out the water from the basin, when the dock is in it.

The ways upon which the ship will be moved from the dock to the land, will be formed with iron grooves for the reception of cannon balls, and will incline one foot and a half to 100 feet; or they will be laid level, as may be preferred, though the former is deemed the better plan. The foundation will be of the most solid construction according to the nature of the soil at the respective stations. By adding 50 feet to the width of the basin, two lines of ways may be laid on the land; and by making it 310 feet square no less than 15 vessels may be placed on the land upon three of its sides, thus affording much greater accommodation for railways than the sectional dock can.

The power to be employed to move the ships along the ways will be that of the hydrostatic press, arranged with double cylinders, in such a manner as to maintain an equal and continued motion in moving the ship in either direction, thus saving the time otherwise occupied in fleeting; also avoiding the jerk consequent upon stopping and starting. The houses over the engines and machinery will be
15 be of brick. All the work and materials will be of the best kind. All the arrangements will be perfect and in working order. The hauling beams and hydrostatic pumps will be similar to those used in the hydrostatic lifting docks now in use in this city.

But instead of a stone basin, we offer to the consideration of the department an improved basin equally adapted to the purpose of

sustaining a floating dock, and at the same time serviceable as a timber seasoning basin, while much less expensive in construction.

For a description of it, we refer to the accompanying copy of a caveat recently filed in the Patent Office.

MODIFICATION OF THE BALANCE DOCK.

The docks above described are all constructed in one solid mass. We have, however, at the same time to state that we have a perfect working model of a modification of that plan, founded on the same principles, though somewhat varied from the above mode of construction. It is suggested, not as being in our opinion an improvement, but in case of the possibility that it might be preferred by the department. It is to add the quality of divisibility to the other features which mark the balance dock as above described. Gilbert's patent being for the combination of the caisson or screw principle with the tank principle, that combination may also be made by cutting the dock into four or more transverse sections, joining them close together, and then laying in them a long scow, extending the whole length of the four parts, its sides extending up 18 feet, and fitting close into the space it is intended to fill; this scow being provided with arches or bridging to make it perfectly rigid longitudinally, and end gates, and also with sloping side altars for shoring. When thus put together, this dock would be in all respects substantially the same as the ordinary balance dock, differing only in the one feature of divisibility.

It would admit of being taken apart, the scow being floated
16 out so as to admit of any one of the sections being repaired upon the others, while the scow itself can be raised on the shallow tanks beneath it; but it is not designed to use the buoyant power of these tanks for raising the ship. We have a model of such a dock which we are prepared to exhibit to the commission, if desired. Its cost would be about the same as that of the other. But we repeat that we do not offer it as an improvement. Its only advantage consists in the facility with which one part could be repaired upon the other parts. But on the other hand the dock, such as we have above described it, admits oi the execution of all repairs that can ever be required inside of the dock itself. The bottom can never receive any injury from without, except damage to the copper, which in southern waters might be important, and which can easily be repaired by drawing the dock up on ways, or by floating it on shore at high tide, in a way that it will be fully explained below.

PROPOSED IRON TANK BOTTOM FOR WOODEN DOCKS.

But there is another modification of the mode of construction such as has been above described, which we do recommend as a desirable improvement. It is (for those stations at which protection against worms is required) to substitute, instead of coppering, an iron tank into which the dock shall fit closely, of $\frac{3}{8}$-inch iron, about 10 feet deep. Being kept constantly submerged, this would not be exposed to destruction from rust, since it is only near their water

line, where the action of the atmosphere and sun alternates with the salt water, that iron vessels rot. But if in the course of time this tank or pan should require renewal, it will be easy to renew it. If this suggestion should be adopted, the mode of construction would be to build and launch the tank first, and then build the dock up inside of it. The cost will not much exceed that of coppering.

PRICES.

Pensacola.—Wood being the material, we will engage to
17 complete the work in 150 working days. The price, to fulfil all the conditions called for by the bureau, including that of a camel, will be $400,000. In case it should not fulfil the functions of a camel, we will deduct 75,000. If twelve months are allowed for the work, our price will be $30,000 less; that is to say, in the one case $370,000, and in the other, $400,000.

If iron should be the material employed, we propose, as the most satisfactory mode, to fix the price by the pound; if twelve months are allowed, thirteen cents per pound; if eighteen months, twelve and a-half cents.

Philadelphia.—If of wood, $250,000; if of iron, eleven and half cents.

Kittery.—If of wood, $275,000; if of iron, twelve cents.

Stone basins and railways.—Our prices for stone basins and railways, with all the appurtenances complete, as called for by the bureau, will be, for Pensacola, $250,000; Philadelphia and Kittery, $200,000. If an iron floating gate be added, its price will be $.

We desire to have it distinctly understood by the department, that we claim the sole and exclusive right to the construction and use of a basin in connexion with floating docks, notwithstanding the patent fraudulently obtained by other parties, Mr. Gilbert having been its original inventor. Evidence is on file in the Patent Office, on which legal counsel have advised, that the patent of Dakin and Moody can be easily overthrown by a proceeding in equity, and the prior right of the true inventor established; the said evidence having been ruled out from admission by that officer, (by a clerk acting at that time as commissioner,) on the ground of a slight technical informality in the indorsement on the envelope containing the same. We are willing to prove this to the satisfaction of the department, if it is disposed to go into such an investigation; or else to do so in any proper legal mode.

18 Nevertheless, we do not regard such excavated basins as either necessary for the balance dock to enable vessels to be drawn on shore, or as being equal in usefulness for that purpose to our pile and stringer timber-seasoning basin above mentioned. The balance dock does not need any such resting place or support, to insure a perfect steadiness and motionlessness; and it can be so arranged, without any such accessory, as to preserve its perfect level during the process of hauling off a ship, by letting into the transverse compart-

ments at the one end of the dock a weight of water equivalent to the weight withdrawn by the withdrawal of the ship at the other end. But we have fixed a price because the same is called for, though at the same time we declare it to be superfluous and unnecessary in regard to this plan of dock, however indispensable in order to permit the use of railways in connexion with other plans.

For our pile and stringer basin above described, the same being sheathed with copper or iron, our price will be less than half the prices for stone basins for the respective places. The combination of a floating dock and railways was first perfected by Messrs. Schull and Martin, and laid before the commissioners, Messrs. Kennon, Humphrey, and Johnson, in 1842, when they applied for a patent, but were refused on the ground that the plan was old, and therefore not patentable.

In reply to the inquiry respecting a sale of the patent right, we beg leave to state, that we do not feel prepared at this time to offer it at any fixed price to the government, for the obvious reason that the government cannot, as it seems to us, be in a position to appreciate it at its just and proper value, until after it shall have been actually tested and used by it on the large scale contemplated by the now proposed docks. Our offer is to build these docks ourselves, under inspection of the department, with all satisfactory guaranties and security; and for prices which, while they include both the patent right and guaranties, are, we believe, as low as, or lower than the government would find the cost to it under any other mode of construction. We deem it but just, too, that in view of the importance to ourselves of the complete and satisfactory success of the first docks to be built for the navy, they should be built by ourselves under all the responsibilities which can only attach to the inventor and proprietors of the plan. After the completion of these docks, being confident that more will then be desired by the government, we are entirely willing that the value of the patent right should be fixed by an impartial authority, mutually satisfactory, say any two post captains appointed by the department, and two distinguished merchants of standing and character satisfactory to the department, with the selection of a fifth by themselves, if necessary; the government to have the privilege of then taking the patent right at their estimate, if it shall think proper.

19

SECURITY.

Without specifying here the sureties to be offered by us, such not being called for, we deem it sufficient to state, that we will give bonds and security to the satisfaction of the Secretary of the Navy, the U. S. district attorney, or any other authority that may be designated for that purpose, for the faithful and full execution of the contracts that may be made with us for the construction of balance docks at the respective stations; the execution of such contracts being under the close inspection of any person to be appointed by the Secretary of the Navy; and a proportion of the whole purchase money, not less than per cent. being left in the hands of the gov-

ernment, until after the dock shall have been in satisfactory operation such length of time as the department shall deem a proper trial; within which period, in order to demonstrate the facility with which the balance dock can be taken on shore for repairs, it will be
20 drawn up on shore and restored to the water, if that practical demonstration should be desired by the department.

The present is not deemed the proper occasion for any remarks, or calculations, or evidences in support of our allegations respecting the adequacy of the constructions herein above proposed, for the purpose to which they are destined. It is enough to say that our proportions are founded on thorough practical tests of the strength of materials, made in some cases on a larger scale than is known to have been ever made before. Our calculations and proofs we are prepared to lay before the commission to which it is understood that the subject is to be referred; the letters received from the Bureau of Yards and Docks indicating a desire that our present communication should be confined to the specifications and answers called for by it.

Very respectfully, your obedient servant,

JOHN S. GILBERT,
For himself and associates.

It will be seen that the docks above specified are long enough to enclose a vessel of 300 feet in length, or several smaller vessels. Being of opinion that a ship's keel ought to be covered along its whole length with the lifting support by which it is raised and sustained, we have made our estimates for a dock of that length. But the balance dock at New Orleans, 220 feet long, is in the habit of docking steamers of 275 feet, by allowing a projection at the light ends, by means of the lapping gates, and has also docked three smaller vessels at a time. If the department shall be of opinion that any portion of the vessel's length may be left unsupported by the actual lifting power, we are willing to reduce the length of the dock, with a corresponding reduction of price.

J. S. G.

And these claimants further show that these claimants' said plans and specifications, together with all others, were referred by the Hon. Secretary of the Navy to a board of officers, on the 29th of
21 April, 1847, as by reference to the order of said Secretary of the Navy, contained in a message of the President of the United States, communicating a report from the Secretary of the Navy, in relation to the construction of floating docks at Pensacola, Philadelphia, and Kittery, and known as Executive document No. 11, 30th Congress, 1st session, which was in the words and figures following, to wit, and as by reference thereto will more fully and at large appear.

Message of the President of the United States, communicating a report from the Secretary of the Navy in relation to the construction of floating dry docks at Pensacola, Philadelphia, and Kittery.

December 23, 1847.—Read, referred to the Committee on Naval Affairs, and ordered to be printed.

January 6, 1848.—Ordered to be printed in connexion with all communications heretofore received from the Executive on the subject.

To the Senate and House of Representatives:

I communicate herewith a report of the Secretary of the Navy, containing a statement of the measures which have been taken in execution of the act of 3d March last, relating to the construction of floating dry docks at Pensacola, Philadelphia, and Kittery.

JAMES K. POLK.

Washington, December 22, 1847.

NAVY DEPARTMENT,
December 21, 1847.

SIR: In accordance with the purpose suggested in my annual report, I have the honor to submit a report of the measures taken by the department, in execution of the act of Congress of the third of March last, on the subject of floating dry docks, with appendages, at Philadelphia, Kittery, and Pensacola.

22 In the act making the annual appropriations for the naval service for the year ending the thirtieth of June, 1848, is the following:

"That the Secretary of the Navy is hereby directed to cause to be constructed at each of the navy yards at Kittery, Philadelphia, and Pensacola, a floating dry dock for ships of the line, with basin and railways at Philadelphia, and reference thereto at the other places, on such plan as may be preferred by the Secretary of the Navy; the said dock at Pensacola to be completed with all possible despatch; and the sum of fifty thousand dollars is hereby appropriated towards said dock at Kittery; fifty thousand dollars towards said dock at Philadelphia; and two hundred and fifty thousand dollars towards said dock at Pensacola; out of any money in the treasury not otherwise appropriated."

This enactment imposed on the Secretary of the Navy the duty of causing to be constructed at the several navy yards named, the structures specified, on such plan as may be preferred by him; and the means applicable to this object, were the sums of money respectively appropriated for the purpose; that is to say, two hundred and fifty thousand dollars at Pensacola, and fifty thousand dollars each for Philadelphia and Kittery. The preliminary inquiry was, necessarily, what plan of floating dry dock was entitled to preference for construction at each of the three navy yards. While I could not construe the acts as adopting any particular plan, I did regard it as a fair in-

terpretation, that the plan preferred and selected by the department was to be adopted for each of the places in exclusion of all others.

This inquiry involved scientific and mechanical investigations which I did not feel qualified to conduct to satisfactory results; and it was desirable that the proprietors of the several plans of floating dry docks should present, with their own explanations and specifications, their respective inventions for consideration. Under my
23 direction, the Chief of the Bureau of Yards and Docks addressed a letter to each of the several proprietors or agents who had offered their plans of docks to the government, requesting them to state the terms, respectively, on which they would construct a dock upon their several plans, with and without basin and railways, and to submit specifications of their plans in detail. They were also requested to state the price at which they would each sell to the government the use of their respective patent privileges in the construction of the proposed docks.

Not content to rely on my own judgment in deciding on the plan of floating dry dock to be preferred, the adaptation of which for ships of war of very large displacement was believed to be yet untried, the department called to its aid a board composed of two experienced captains in the navy, two scientific engineers of established character, and one experienced naval constructor, all of them gentlemen well known to the country for sound judgment and professional attainment, and whose opinions on the subject of the relative merits of completing plans of floating dry docks I had previously ascertained to be free from bias.

The board assembled at Washington, and on the 29th of April last instructions were given by my direction on the several points of inquiry which were deemed important in the investigation to be made by them. A copy of these instructions is transmitted herewith. With these instructions, the Bureau of Yards and Docks placed in the hands of the board all papers received from the several proprietors of patented plans of floating docks, or their agents.

The board attentively considered the propositions, plans, and specifications submitted; received the explanations of such of the parties, or their agents or attorneys, as desired to be heard; examined models, prints, and drawings; visited the navy yards at Philadelphia and Kittery, and selected proper sites at each; examined ac-
24 curate charts of the Bay of Pensacola, and reports of former commissions; and witnessed at New York the process of docking and undocking vessels on the only two plans which were known to be in practical operation; and after deliberation, reported to the department, on the third day of June last, the result of their investigation. A copy of this report is also herewith submitted.

As the report embodies the substance of the several propositions from proprietors of plans of floating docks, it is not deemed necessary to transmit copies of these voluminous papers with this report; but they, or those relating to any particular plans of docks, will be communicated to the committees of Congress, if they shall be required.

The report of the board was referred to the Bureau of Yards and

Docks for an opinion, and, on the 18th of June, a report was made by the chief of that bureau, a copy of which is herewith transmitted.

The law imposed on the department the duty of causing floating dry docks to be constructed, as specified, at the several navy yards named. It is known that at Philadelphia, Kittery, and Pensacola, there are regularly organized establishments for the purposes of construction and repair, with officers, naval constructors, mechanics, and laborers, for whose salaries and pay appropriations are annually made, and were made, in the same act which contains the appropriations for the construction of the floating dry docks.

As a general rule, I cannot entertain a doubt that all work of construction connected with the naval service, directed by law to be done under control of the navy department, must be done (at the yards) under the direction of the officers, and with the labor and materials employed and purchased as other public work at the navy yards is done, unless the law directs it to be done by contract. This position is confirmed by the act of August 10th, 1846, which authorizes the President, in certain cases, to cause war steamers to be built by private contract, instead of being built at the navy yards, as otherwise would have been necessary.

Each of the several plans of dock submitted to the department was a patented invention; and good faith would not permit me to invade a patent right, by using a patented plan of construction without the consent of the proprietors. The proprietors of the two plans of dock, known as the balance and sectional docks, in their propositions in answer to the invitation of the department, made in March last, had not specified any price at which the right to use either patent right would be sold to the department; and the prices contained in their proposals for construction by contract, greatly exceeded the sums appropriated for the object at the three named yards. The Chief of the Bureau of Yards and Docks, under my direction, again addressed to the respective proprietors of these two plans a communication calling their attention to this point of inquiry, and requesting them to state the price at which the government would be permitted to use the patent privilege in constructing the docks authorized. They declined to make such an arrangement, but repeated the offer to contract for the execution of the work.

To execute the law without a violation of a patent right, the department had no alternative but to cause the construction to be made by contract with the proprietors of one or other of the preferable plans of dock, on their own terms. Until the department was prepared to enter into such contract, the public interest forbade the decision of preference between these two plans. Keeping that question open was the only means of securing any competition on the subject.

As I did not perceive in the law authority to enter into contract, and the appropriations were not adequate to meet the necessary expenditures, I doubted my authority to make such contract under the restrictions imposed on the executive departments of the government by the sixth section of the act of Congress of May 1, 1820, which

26 declares, that, "no contract shall hereafter be made by the Secretary of State, or of the Treasury, or of the Department of War, or of the Navy, except under a law authorizing the same, or under an appropriation adequate to its fulfilment; and excepting, also, contracts for the subsistence and clothing of the army or navy, and contracts by the quartermaster's department, which may be made by the secretaries of those departments."

I asked the opinion of the Attorney General on the questions involved, and he came to the conclusion that the law did not confer the authority. In this view of the law I entirely concurred. I transmit copies of my letter to the Attorney General, and of his reply communicating his opinion.

Unable to procure the privilege of using the patented plan of dock which might be deemed preferable, and inhibited by law from entering into contract for the execution of the work, the department, anxious to the extent of its power, to carry into execution the requirements of the act of Congress, directed to the Bureau of Yards and Docks to contract within the appropriation after advertisement, for the delivery of such materials at each of the three navy yards designated, as would be suitable for either the balance or sectional docks, or for other naval purposes. These contracts have been made according to law.

After the opinion of the Attorney General had been received, alternative proposals for constructing the dock at Pensacola by contract, were submitted by the proprietor of the balance dock, having direct reference to the appropriation, but dependent on material modifications of the dimensions proposed by the department, in the circular of the 19th of March. These were declined, because it was believed that the prescribed dimensions and capacity were essential to the utility of the dock for the naval service, and that the purpose of the law was to secure a suitable dock for vessels of the largest size in the navy. It seemed to me also to be just and proper
27 that if the terms were modified, the proprietors of other plans should have the like opportunity of submitting proposals, and I was unwilling to contract for a dock at one place, until the department was prepared to execute the law at the others.

It becomes necessary, for the reasons stated in this report, that the subject should be submttted to Congress, for such enlargement of the powers conferred on the department by existing laws, or such increase of the appropriations made as may be deemed adequate to the fulfilment of its objects; and I respectfully ask that this may be done.

On the question of the most suitable plan for dry dock for naval purposes, my opinion officially formed in 1844, in favor of the permanent stone dock as preferable to all others, is unchanged. Of the relative merits of the balance and sectional docks, entertaining this opinion, I would have much hesitation in forming a decided and satisfactory judgment. They are both constructed on ingenious principles, and are both extensively used by the mercantile marine; but I may add, without injustice, that neither of them, in my judgment, has been so

far tested, or can be constructed, as to be regarded as proper substitutes for the use of the government for the permanent stone dock, whatever may be their values as auxiliaries.

With every disposition to meet the wishes of Congress in execution of the laws, I deem it not unreasonable to ask, that in the event of adequate appropriations being made, or of legislative direction to contract with a patentee being given, for the construction of the floating dry docks, and for the necessary preparations for their secure operation, that Congress will, by determining on the particular plans of dock, and prescribing the pecuniary price to be paid, relieve me from the duty of selection.

I have the honor to be, very respectfully,

Your obedient servant,

J. Y. MASON.

To THE PRESIDENT.

28 NAVY DEPARTMENT, *April* 29, 1847.

SIR: The board of which you will act as president, having been convened "for the purpose of deliberating upon the subject of dry docks for the naval service," in accordance with the directions of the department of the 19th instant, I have the honor to communicate the following extract from the act of Congress, of March 3, 1847.

"That the Secretary of the Navy is hereby directed to cause to be constructed at each of the navy yards, at Kittery, Philadelphia, and Pensacola, a floating dry dock for ships-of-the-line, with basin and railways at Philadelphia, and reference thereto at the other places, on such plan as may be preferred by the Secretary of the Navy. The said dock at Pensacola to be completed with all possible despatch, and the sum of fifty thousand dollars is hereby appropriated towards said dock at Kittery; fifty thousand dollars towards said dock at Philadelphia, and two hundred and fifty thousand dollars towards said dock at Pensacola, out of any money in the treasury not otherwise appropriated."

In making up your judgment upon the best plan of floating docks, you will have particular reference to the following points of inquiry:

1st. Materials, method of construction, and cost of either kind, with and without basin and railways.

2d. Depth of water required to receive and raise a ship of three decks with armament and stores on board, equal to a displacement of 5,300 tons, or a steam vessel of the largest class, say of —— feet in length, and —— feet beam.

3d. The strength, thickness, nature and qualities of the bottom of the dock, and the platform to receive the keel of a ship.

4th. The facilities for, and time occupied in, raising a vessel, stability and strength for lifting and sustaining her, and the construc- of the dock as applicable to secure and safe shoreing, and as least liable to injury to the vessel from unequal bearings upon the blocks and shores.

29 5th. Applicability to raising a small vessel as well as a large one, or for raising several small vessels at the same time.

6th. Space and accommodation for workmen and materials, and facilities of light, air, &c.

7th. What piers or breakwaters, if any, are necessary to protect the dock from storms.

8th. Liability to accident from contingent causes, such as resting upon an uneven bottom, collision with a wharf, pier, vessel, floating masses of ice, or other matter, marine worms, natural decay, fire, storms, and sea.

9th. Comparative durability, accessary means, practicability, facility, and mode of repair.

10th. Camel qualities for raising the largest vessels outside of a barred harbor, and transporting them in and out of port over the bar.

11th. The effect of the undulating motion of the sea upon the dock in raising and lowering vessels outside of a barred harbor. The effect of currents and the comparative ease and safety with which the docks may be transported with a vessel upon them from one place to another.

12th. Adaptation to basin and railways for hauling vessels on shore, and vice versa.

13th. Size, materials, and manner of construction of basin, and the comparative ease and safety in the operation of hauling vessels on and off the land.

14th. Finally, whether basin and railways are necessary to the usefulness of a floating dock at Kittery or Pensacola.

Plans and estimates from the proprietors of the sectional and balance docks, and such other floating docks as have been brought to the notice of the department will be laid before you.

I am, very respectfully, your obedient servant,

J. Y. MASON.

Com. JOHN DOWNES, *President of the Board, &c.*

30 NAVY DEPARTMENT, *April 30th*, 1847.

SIR: Your letter of this date, informing me of the organization of the board convened for the purpose of deliberating upon the subject of dry docks, has been received.

The Chief of the Bureau of Yards and Docks will communicate to you all the papers and documents which relate to the subject.

The board will provide a suitable place of meeting, and is authorized to employ a clerk, who will receive five dollars per day and the usual travelling allowance, when called by the board to leave the city.

I am, very respectfully, your obedient servant,

J. Y. MASON.

Commodore JOHN DOWNES, *President of the Board, &c.*

WASHINGTON CITY, *June 3*, 1847.

SIR: The undersigned board of commissioners, charged with instructions from the honorable department over which you preside to examine into the comparative merits and capabilities of "floating dry

docks" and their applicability to naval uses, in the discharge of this important and somewhat delicate trust, have bestowed on this subject all the mature consideration which a proper regard for the naval interests of the country would seem to impose, and a merited respect for the ingenuity and enterprise of those individuals who have submitted their respective inventions for inspection most unquestionably claim.

They have been greatly assisted in this research by the impartial investigations, able reports of engineers of acknowledged scientific attainments; of experienced naval commanders and competent constructors, skilled in the art of managing and of building vessels of war, who, under different appointments from former secreta-
31 ries of the navy, having for object the same ends, have preceded in the work of this commission.

The undersigned have further minutely examined the designs, plans, and models of various docks and marine railways; patiently listened to the statements and explanations of the respective inventors; carefully perused and considered the memorials, affidavits, and testimonials, foreign and domestic, from the different parties represented, and, in addition, have personally inspected and witnessed the practical and successful operations of the two docks now in use for the merchant service in New York, and there known and designated as the sectional dock of Messrs. Dakin & Moody, and the "Gilbert balance dock."

The docks which have been submitted for examination—all of the parties claiming patents for the same—are:

First. The sectional docks of Mr, John Thomas, of Mr. Samuel Loveland, and of Messrs. Dakin & Moody.

Second. The balance dock of Mr. John S. Gilbert.

Third. The pnuematic dock of Mr. Peter Von Schmidt.

This latter is an ingeniously contrived framed work of wood, 300 feet in one direction by 175 in the other, resting on 230 cylinders of same material, in which is reposed the lifting and depressing power. As air is forced into the cylinders by pneumatic pressure, through the instrumentality of pumps, the water is expelled, and as the water is again admitted by the withdrawal of the pressure, on the opening of valves, the air escapes. Thus, by the buoyant and depressing alternate agencies of air and water, the whole structure is made to rise and fall, and lift the weight graduated to the capacity of the cylinders which may be placed on its platform.

The cost of such a dock at Pensacola, with machinery and appurtenances, protected from worms with copper sheathing, is estimated at $379,000; and if petroleum impregnation is substituted for copper, at $234,000.

It is a design of much ingenuity, but too complicated in its
32 machinery and working, and occupying too much space for the practical uses to which, in naval service, it would be desirable to apply it. It could only be safely used when afloat and in a calm sea; resting on or in contact with the ground, with the weight

of a vessel, would be fatal to the whole structure, as was admitted by the ingenious designer. It has none of the properties of a camel.

There are, in the designs of the docks which have come under the examination of this commission, but two discriminating principles involved in their construction, and on which a comparison can be fairly instituted to decide on their relative merits: the one, that of the caisson, with that of interior compartment enclosed by gates, on the platform of which the vessel rests, and in which she is secured and elevated from the water; the other, that of the tank or tanks immersed, and on the upper surface or top of which the vessel may be said to float or is raised the height desired.

The one dock contains the vessel enclosed, as a ship does its cargo, and with the centre of gravity and of effort of both at the lowest practicable point; the other sustains the vessel as on a floating raft or platform, with buoyant power in side floats graduated to sustain the weight, the centre of gravity and of effort being proportionally elevated.

"Gilbert's balance dock" is on the first principal, the caisson, and all of the others on the last, or that of the immersed tanks; but as the sectional dock of Dakin & Moody, now in successful operation in New York, has been more approved in all its parts than any of the others which have been enumerated, and similarly constructed, the comparative investigation of this commission have involuntarily, by unanimous concurrence, been limited to these two docks, as embodying in greatest perfection the two controlling and antagonistical principles of construction.

By the same power (that of a displacement of a body of water
33 equal to or greater in weight than that of the body to be lifted) that a ship is made to float, she may be lifted out of the element in which she is suspended, and the problem does not require demonstration, that by either of the plans, that of the sectional or of the balance docks now under review, a vessel of any class, naval or commercial, may be elevated from the water, and placed in a comparative safe condition for examination or reparation. The main question in the comparison involved is, by which *which* plan of structure can the operation be performed with the greatest despatch and economy, with most certainty and security, and which of the docks in the construction of its various parts is most recommended for the advantageous performance of all that may be required in the naval service in docking ships-of-war.

In approximating to the desirable results of this important investigation, this commission will now proceed to the answering of the inquiries in the order propounded by the honorable the Secretary of the Navy.

First. "Materials, method of construction, cost of either kind, with or without basin."

The plans of construction in all of their details are embraced in the specifications submitted by Messrs. Dakin & Moody and Mr. John S. Gilbert, the proprietors of the two docks presenting the conflicting claims for preference, with subsequent modifications, all of which,

marked A, B, and C, are herewith presented as a part of this report. They have been carefully examined, and it is believed will be found as strong as the materials of which the docks proposed to be constructed will admit. The most approved plans of connecting of timbers have been preserved in the designs, and iron bolts, screws, and nuts applied wherever they can impart the strength desired. The timber to be used is proposed to be of yellow pine at Pensacola, and of white oak at Philadelphia and Kittery. At the former place, the dock to be coppered to the extent of the parts exposed to injury from worms, and at the other two places to be sheathed with
34 plank. Estimates of the cost of the same docks, if iron be substituted, have likewise been presented.

In the specification of Messrs. Dakin & Moody, estimates of costs are made for two docks, one six, the other of eight sections; the one designed for ships of the line, the other for steamers. As the estimates of Mr. Gilbert's balance dock are made to conform to the specifications of the department, with a dock of capacity sufficient to lift a ship of line as well as steamers, we assume, in the comparison, the eight section dock of Dakin & Moody as alone equal to the performance of both services. These estimates for the sectional docks of eight sections are as follows:

AT PHILADELPHIA.

If made of wood	$281,600
For basin 270 by 225 feet, with hydraulic apparatus for drawing up, with 6 railways	287,000
Total for dock and basin	568,600
If the dock is constructed of iron,	$527,000
Total for iron dock and basin, as above	$814,000

AT KITTERY.

For dock of wood	$281,600
Basin 270 by 225, &c., &c.	275,000
Total	556,600
For dock of iron	$527,000
Total for iron dock and basin	$802,000

AT PENSACOLA.

For dock of wood	$325,600
For basin, 6 railways, &c., &c.	367,000
Total for dock and basin	692,600
For dock of iron	$573,000
Total for iron dock and basin	$940,000

In the above, coppering is not included, which is estimated at $4,800 per section at Kittery and Philadelphia, and $5,000 at Pensacola. As coppering will be indispensable at that yard, it will increase the cost of dock $40,000, making the whole cost of wooden dock alone $365,600.

In the above estimate the basin is but 270 feet by 225, and arranged but for six railways; while, on the drawings and plans of basin and railways submitted, are for nine (9) railways and a receiving basin 300 feet square.

These necessary enlargements to accomplish the objects contemplated by the railway system, in connexion docks, so strenuously recommended as a great improvement, will all involve a proportional additional expenditure. The estimates are based on the presumption that no rock or harder substances are encountered than ordinary soil or clay in the excavations necessary; and the specifications are not clear as to whether the necessary dredging to make the channel to the dock is included—an operation expensive in the first instance, and involving continual annual expenditure.

The specifications for the Gilbert balance dock are in the following language: "The balance dock being a vessel, the description of its parts will be in the ordinary terms employed by ship-builders:

"*Dimensions.*—The outside dimensions at the top will be 300 feet in length by 100 in breadth—the depth being 38 feet." "The iron dock will be of the same form and dimensions as that of wood."

"The stone basin for a single railway will be 110 feet wide by 310 feet long, having on three sides walls of cut stone masonry 14 feet high, 6 feet thick at bottom, and 3 feet at top, battering three feet in the whole height; the depth of water in the basin at high water will be 10 feet."

36 The estimated cost of a balance dock on the above specifications as to dimensions, is—

AT PHILADELPHIA.

For dock of wood	$250,000 00
For basin and railway	200,000 00
Total for dock and basin	450,000 00

If the dock is constructed of iron, 11½ cents pound.

AT KITTERY.

Dock of wood	$275,000 00
Basin and railway	200,000 00
Total for dock and basin	475,000 00

If of iron for dock, 12 cents per pound.

AT PENSACOLA.

Dock of wood, coppered, with camel properties to transport ships over the bar	$400,000 00
For basin and railway	250,000 00
Total for dock and basin	650,000 00

If iron should be the material employed, the cost will be at 13 cents per pound, if twelve months are allowed to complete, and 12½ cents per pound if extended to eighteen months.

The docks of iron are estimated to weigh, for Kittery and Philadelphia, 1,500 tons each, and at Pensacola, 1,700 tons, which, at the prices per pound stated, the engines and machinery being included in the price, will be for an iron dock at Kittery, $403,200; at Philadelphia, $386,400; and at Pensacola, $476,000.

Mr. Gilbert, in his connecting railways, contemplates but one railway; and, if his basis requires to be enlarged so as to embrace two or more, it will involve a larger proportional expenditure. It
37 does not appear whether he includes in his estimates the necessary dredging for channel way to dock. Should it be necessary to enclose the basin of both docks by gates, and which may, in practice, be very important, this operation will involve a heavy extra expenditure, not included in the estimates of either party.

The above dock, for Pensacola, it is proposed to complete in one hundred and fifty working days; but if the time is extended to twelve months, $30,000 dollars will be deducted, reducing the cost of dock from $400,000 to $370,000. It appears, however, in Mr. Gilbert's estimate, that a charge of $75,000 is made as a guarantee, and which is to be retained for the successful performance of the dock as a camel in passing and repassing, with ships on board, the Pensacola bar. It is presumed, however, that this sum will be deducted, if the guarantee is not insisted on, and which will reduce the cost of the dock, twelve months being allowed for construction, to $295,000, making the whole cost of basin and dock $545,000.

The right to use the patent is considered as included in the estimated cost of both docks.

This commission have not had the elements furnished on which to base calculations to test the accuracy of the above estimates, or could they probably be procured and acted on without the delay of many weeks. It is presumed, however, that the Navy Department would

have all of the above estimates carefully revised, in connexion with the specifications of plan of construction, by competent engineers or naval constructors, before any contract is concluded with either of the parties. Their own estimates, however, and which have been assumed, furnish a basis of comparison, which the respective parties interested cannot consider otherwise than as impartial.

The substitution of iron for wood, in the construction of those docks, with a view of obviating the objections to the want of durability in the latter, is a question this committee do not feel prepared to decide.

38 It would certainly enhance the cost, without, probably, the corresponding advantage expected, and it would require more experience than the present age affords to determine what would be the hazard of depending on iron vessels, made of separate sheets, connected as in a steam boiler, by rivets exposed to corrosion, and not secure from the disturbing effects of a shock, which may occasion leakage, as tanks on the buoyant, permanent power of which, rested the perfection of the structure which they were intended to sustain.

Iron, to supercede wood in naval architecture, is a problem which remains yet to be solved. The experiments thus far, where made, have not been as encouraging as were anticipated, and the effect of salt water on iron has been found very impairing. Though it may resist the direct attack of worms in southern latitudes, shells, barnacles, &c., have been found to attach themselves to the surface of iron with as much tenacity as to wood, which, if not injurious to the durability of the iron, would certainly effect the structure in grounding, and when used as a camel.

The Mexican steamer-of-war, in New York, exhibits on her bottom and sides injuries from salt water, which should, at least, produce hesitation before any other attempts to introduce iron in ship building, intended to navigate the ocean should be made. In Europe and in this country, experiments are in progress to test the comparative strength and durability of iron with wood, in all the positions in which they may be exposed, and until results more reliable than those we now have are known, this commission would not feel warranted to recommend the substitution of iron for wood proposed in the construction of the docks now under review, and particularly as the only object would be to secure greater durability, of which there is at present no certainty, but that of greater expense, without probably corresponding results.

39 *Inquiry* 2.—"Depth of water to receive and raise a ship of three decks, with armament and stores on board, equal to a displacement of 5,300 tons, or a steam vessel of the largest class, say, 300 feet extreme length and 75 feet in breadth to outside of guards."

It would require a depth of not less than 40 feet of water to get the sectional dock under the keel of the Pennsylvania with her armament on board, drawing 26 and 27 feet of water, while the balance dock will require but 35 feet.

The additional depth of water over the draught of a ship to be docked for naval purposes (as all vessels of war are comparatively

sharp, and of great draught) is a serious objection to floating structures proposed for the performance of said functions. As this defect is less in the balance than in the sectional dock, in this particular it will claim a preference.

Inquiry 3.—"The strength, thickness, nature, and qualities of the bottom of the dock and the platform to receive the keel of the ship."

The bottom and platform of the sectional dock is formed of 3½-inch plank, secured to the interior frame work of the tanks, and caulked, to guard against leakage. The balance dock is, on the contrary, composed of three thicknesses of 12-inch timber; upon the top of which are truss-beams three feet thick in the middle, presenting 6 feet of solid timber for the ship to rest upon. The former structure would evidently be most exposed to strain, and yield on grounding, and thus occasion leaks. In this respect, therefore, more confidence is reposed in the balance than the sectional dock.

Inquiry 4.—"The facilities for, and time occupied in raising a vessel; stability and strength for lifting and sustaining her, and the construction of the dock as applicable to secure and safe shoreing, and as least liable to injury to the vessels from unequal bearings upon the blocks and shores."

40 The time occupied to raise the vessel in either dock depends upon the number and dimensions of the pumps, and the power applied to the working of them; but in either dock it will require not to exceed three hours with the power proposed. This will be a period as short as would be required to secure the ship in her position as the supporting power of the water is withdrawn.

There is no doubt but that in both of the plans of dock submitted, there is ample stability for the purposes to be accomplished, and such as would not probably endanger the ship docked in or on either, provided she can be safe and properly secured by keel blocks and shores, &c.

It is obvious that the lower the centre of gravity the further it is from the line of support when the dock inclines; and if the ship be raised, both the centre of gravity and of effort will be proportionably elevated, so that the action of the wind upon the side, &c., will have more effect to careen the dock, unless the width of the dock is proportionally widened. As the sectional dock, with side floats, is as 146 feet in width to 100 of the balance dock, it would have a proportional greater stability, provided all other elements involved in the calculation—of equal height, of centre of gravity, of centre of effort, of equal weight, equal displacement per foot—accord; but at equal widths, calculation will demonstrate results more favorable to the balance dock; and from the obvious fact that the centre of gravity, with the ship in it, will be but 4 feet, and the centre of effort will be but 36 feet above the water line, while the centre of gravity in the sectional dock will be 9.50 feet, and the centre of effort 40.50 feet above the water line. As, however, it is proposed in the balance dock to add ballast in the side chambers so as to make the weight of dock and ballast equal to the weight of ship to be lifted,

having ample buoyant power for such object, it is apparent great additional stability may be imparted to the structure. As there is no stability in the tanks of the sectional when immersed, any additional weight by deeper immersion could impart no additional stability, except what the tank-floats might afford.

41 In these calculations the weights and dimensions of each dock is assumed from the representations of the respective parties. Any error or modification of either would consequently change the above figures.

The shoreing.—In the sectional dock the shoreing of a ship will be similar to the shoreing when on the stocks, (with the exception of the extremities, which cannot be so well secured, as the sections do not extend beyond the tread of the keel,) depending entirely on the platform of the dock to rest the heels of the shores on, with cleats nailed on the bottom and sides to secure or confine the heads of the shores. When, in coppering or in preparing to undock a ship, it becomes necessary to remove the cleats, the whole weight and security of the vessel is thrown on the heel and bilge-blocks.

The balance dock corresponds in all its parts and proportions to the excavated stone dock with side altars, and a ship in it may be secured, both stem and stern, in the same manner. From the altars the shores are set or arranged square with the bottom of the ship, become shorter and easily handled, and without the necessity of cleats. They may likewise, from the sides and tops of the dock, be used as supports for scaffolding to work on the sides of a vessel.

It would appear, therefore, that in the construction of the two docks, the advantage of stability on the same base or width, and safe shoreing, so as to expose the ship to the least injury from unequal bearings on the blocks and shores is with the balance dock.

Inquiry 5.—"Applicability to raising a small vessel as well as a large one, or for raising several small vessels at the same time."

This depends on the number and dimensions of sections in the one instance, and the capacity of the dock in the other. The sectional may be separated according to the number of sections of which it is composed, and the respective lifting power of each; and thus

42 applied to the elevating of two or more vessels of a small class while unitedly they elevate but one of a larger.

But this operation of division will involve the necessity of additional steam engine power for each part over two divisions composing a separate dock. The balance dock, in proportion to its length, may likewise be used for small vessels as well as those of the largest class, and two or more may be elevated at the same time. So, in this particular, both docks are capable of performing the same service; the comparison being one of space and dimensions, which may be enlarged or diminished in either.

Inquiry 6.—"The accommodations and space for workmen and materials, and facilities for light and air."

The sectional dock raises the ship entirely above the water, and the platform may be made and preserved dry. There is ample ac-

commodation for workmen and materials, and the same light and air in this dock as if the ship was on the stocks.

The balance dock will not be so dry in the bottom unless it is kept perfectly tight. The walls of the dock will obstruct the air; but there is sufficient light for all practical purposes, and ample space for the accommodation of the workmen and materials. The facilities for erecting stages and repairing the upper works of large vessels are greater in the balance dock, while the sectional dock enjoys the advantage and is entitled to a preference for repairs which are to be done on the bottom. The respective claims of each under this inquiry may be considered equal.

Inquiry 7.—"What piers or breakwaters, if any, are necessary to protect the dock from storms."

Either of the docks, it is believed, might, if well secured by anchors, take a vessel in the stream, but it is deemed most advisable that they should be lodged between piers, not only from the protection they would afford against storms and other bodies coming in contact with them, but for the greater and more important facili-
43 ties those piers will afford to the working on the vessels when in the dock. These piers would be indispensable for the landing of materials, &c., on them, convenient to the docks.

Inquiry 8.—"Liability to accident from contingent causes, such as resting on an uneven bottom, collision with a wharf, pier, vessel, floating masses of ice, or other matter, marine worms, natural decay, fire, storms, and sea."

The sectional and balance docks would both be exposed to injury if grounded on an uneven bottom, especially if ships were in the dock. In case of a collision with wharves, vessels, and floating masses of ice, the sectional dock would suffer in the greatest degree, as the balance tanks or floats are supported in open framework, and would be much more exposed to accident and less able to resist a rude shock from such causes than the wooden wall of the balance dock, as strong as timber can, by interior lattice braces, iron bolts, &c., be made.

In a storm or heavy sea the balance dock, as one compact floating mass, would be better prepared to resist the oscillations of the waves and the rude blasts of wind than a structure of many parts only held together by keyed connecting beams of timber, and which, if broken up or separated into its sectional divisions, would, in a sea, become the instruments, by collision and chaffing, of mutual destruction. Both, if constructed of wood, could not resist fire or the destructive ravages of worms in southern latitudes, and both made of the same material would be exposed to the same and equal causes of decay. Under this head of collisions with wharves, vessels, floating masses of ice, and effect of storm at sea, the balance dock would seem to merit the preference, as least exposed to suffer.

Inquiry 9.—"Comparative durability, accessary means, practicability, facility, and mode of repair."

There could be little difference in the durability of either
44 kind of dock built of the same materials, if submerged when not required to be used, the wooden parts being well protected

with copper, or some other substance certain to resist the ravages of marine worms, and care being taken to raise the docks at certain periods for inspection and necessary reparation, they might be preserved for many years. In this expedient of immersion for preservation, while the whole of the balance dock to the top of its side chambers may be sunk, that of the sectional could not be immersed below the tops of the side floats without exposing the machinery, racks, pinions, &c., to greater injury from sea salt than would the wooden frame-work with which it is connected suffer from being exposed to the air or other causes of decay.

These operations, however, would necessarily involve the expense of a permanent number (say six for the sectional and four for the balance dock) of engineers and assistants to attend to the workings, inspection, and preservation of the steam engines and machinery.

Reparation.—The sectional dock may be raised one section on two, and thus afford the necessary facility for examination and reparation. To get access to the bottom of the balance dock, it would be necessary, for the accomplishment of which arrangement could be made to haul it up on ways. Where the rise of the tide is ample, as at Kittery, the balance dock could be laid on blocks or bed-ways, and thus access obtained to the bottom. This, however, has relation only to the bottom in which there is any difficulty.

There is a discriminating feature in these two docks, which may be here noticed. The tanks of the sectional dock are always immersed, and in the docking and undocking of a ship not exposed.

The only portion of the machine which is at all times open to inspection are the floats and frame-work securing and controlling their motions. Frequent elevations, therefore, of the tanks will be necessary for inspection, and without these elevations, defects or injuries sustained, could not so easily be detected. On the contrary, the balance dock, in performing every operation, exposes all its parts, side chambers, &c., with the exception of its bottom, to view. Every leak and its location is easily detected, and caulking and reparation can be done in the interior, and with great advantage, to the extent of enabling the dock in emergencies to perform its required functions until the opportunity is afforded of more thorough examination and reparation. Should, however, injury occur to any one of the sections of the sectional dock, it would have to be removed, and if the other remaining sections possessed not the buoyant power sufficient for the vessel on dock she would have to be lowered and the work of reparation suspended until the injured tank be repaired. This may be an extreme case where the dock, which may seldom occur, is charged to the full extent of its powers; but in all investigations of this character connected with the exigencies of the naval service the commission consider it necessary and proper to examine into all contingent causes possible as well as probable.

Inquiries 10th and 11th—"Camel properties for raising the largest class vessels outside of a barred harbor, and the transporting them in and out of port over the bar."

"The effect of the undulations and motions of the sea upon the

dock in raising and lowering vessels outside of a barred harbor; the effect of currents, and the comparative ease and safety with which the docks may be transported, with a vessel on them, from one place to another."

The sectional dock is not considered applicable to the purposes of a camel, and from the obvious reason of its being liable to the unequal influence of the undulating motions of the sea on its separate sections or platforms, and exposing the shores supporting the vessel to be loosened. It would be exceedingly difficult to move this dock, of eight sections and covering a space of 146 feet by 300, without danger; and it possesses no means within of being made se-
46 cure while the ship is taken on the dock. In speaking of these camel properties, the proprietors say: "We will warrant its satisfactory and complete performance, in that capacity, in any state of the weather in which any floating dock of any kind can live. In case of a sudden blow arising it would be necessary for the steamer having the dock in tow to cut loose, in consequence of the immense bulk of the dock and ship on it; and, as no floating dock can be built for sailing, it might be driven ashore and wrecked. We believe there are cheap and safe methods of lightening vessels over a bar which may be used in all states of the weather, and we should consider them preferable to the use of any floating dock for the purpose. While, therefore, we should not hesitate to warrant the complete and satisfactory performance of this dock, when used as a camel to float vessels over the bar at Pensacola, in ordinary states of the weather, without compensation, we would not, for any sum, assume the risk of a gale arising while actually engaged in the act."

The balance dock possesses the best camel properties, and could be used with advantage and comparative safety for this purpose, even in passing a barred harbor. In the still or calm water of a river, no doubts of its successful performance, at all times, are entertained. In the Delaware the obstructions to our largest class ships, which are interposed at the Fort Mifflin bar, might be thus overcome. This dock can be secured or anchored while the ship is entering, by cables attached to the side walls, and when the ship is floated into position, and gate closed, she would be in the smooth sea of an enclosed harbor; for it would require an extraordinary sea to move or agitate within such a mass of timber with the weight. The altars and walls afford the facilities of secure and perfect shoreing, and the ship and dock, as a vessel with its cargo, may be towed into port. It is narrower by 46 feet than the sectional dock. It is one mass or body like a mammoth vessel, and will present less resistance in tow-
47 ing through the water. From every examination which has been made of this immense structure of one compact wooden and floating basin, this commission are inclined to the opinion that, as a camel, it will be found on experience preferable to the ordinary camels used in Europe to pass shallow waters, attached to the sides of vessels, which are literally suspended in chains; the failure of the chains stranding the vessels, and the camels thus becoming unmanageable in a heavy sea.

The proprietor of the balance dock feels so confident in its ability to perform the service of a camel, that he proposes that $75,000 of its cost be retained, and to be forfeited on failure.

While the camel properties of the balance dock are evidently more favorable than those of the sectional, this commission have a distrustful confidence in both when used on the ocean. It is presumed neither would be tested, and particularly as their advantageous uses would only be important in lifting the heaviest class vessels; but in the unexpected agitations of that element, by the sudden rising of a squall or norther, so frequent and so difficult to anticipate in the latitudes of the Mexican Gulf, should the dock and ship be caught outside the bar the security to both in the balance would far transcend those in the sectional.

Inquiries 12th and 13th.—"Adaptation to basin and railways for hauling vessels on shore, and vice versa."

"Size, materials, and manner of construction of basin and the comparative ease and safety in the operation of hauling vessels on and off the land."

There are more difficulties and hazards to be encountered in the transfer of ships of great weight, from a floating dock to the firm foundation of land, than would appear on the first examination of the plans. On inspection, the operation looks very feasible on paper and simple in execution. Marine railways are not now for the first time considered, and it remains to be seen whether the aid of a
48 floating dock, first to lift the vessel to the elevation desired, and hauling off on a level, removes the objection to the inclined railways, which, if not absolutely condemned for naval purposes, have been discontinued in practice. The opinion, therefore, of this commission is, after mature consideration, whether such a project, as connecting a basin with railways, intended for taking on and launching from the land vessels for any of the objects set forth by the patentees, is advisable. There are many objections which arise in their minds as it regards the practicability, the great difficulties, and cost of executing the work, with all of the appendages required for the safe and successful operation of landing and launching ships, and, above all, the great question as to the wants of such a contrivance for the present use of the navy, and, problematically so, for a series years to come, a period we have not the foresight to limit.

If the basin is appended to the floating docks at locations where there is little tide, it should have, to make it a safe and perfect work, gates which would exclude the tide and allow of its being pumped out. This would be necessary before the dock was admitted into it, to see if there was nothing on the bottom or bedways which would cause an injury to the copper or wood work of the dock's bottom; and to make repairs in it, or to the dock, should any accident occur, making it requisite while a ship was being hauled ashore. Another important reason which may be offered why we should have the means of excluding the water would be, to have the power of repairing and coppering the floating dock in the basin. The basin walls, basin bedways, or bottom, could be executed in favorable soil with-

out excessive or unforeseen cost; but it would be more difficult, and greatly add to the cost, to contrive and execute the gates which should close the entrance of 100 feet for the balance, and 150 for the sectional dock. The best form for the gates would be such as has been applied for causing slack water on some of the rivers in Pennsylvania, where a wide opening is readily closed against a head of water by the elevation from the bottom of the river of two long horizontal gates, overlapping each other when down or open, and turning on hinges applied to the up-river edge of one and lower edge of the other, the power for elevating them being obtained by the admission of a head of water under the gates. To use such gates for closing the floating dock basin, steam, or some other power, must be substituted and applied to force water under the gates, in case no natural head of water is at hand.

Other contrivances might be adopted, such as a floating gate, single or divided, or a simple perpendicular water-stop, divided or not into parts, and turning up from the bottom in a horizontal quoin or hinge against a series of triangular framed shores or piers, which also should be hinged to the bottom, turning up at right angles to the gate and supporting it from within.

The principal difficulty to be apprehended in the use of the basin is that of docking a ship so that the bottom of the dock or sections should be in a true plane, or technically speaking, out of wind. That it should be so, supposes a delicacy of adjusting the position of the ship in the dock, and regulating the buoyant power to resist with a required degree of nicety to the very unequal pressure of the load in the dock, hardly practicable. If there is an inequality in the bottom of the dock, its effect when the tide shall have ebbed, and the great pressure of the dock and ship has produced its change on the bearing parts, will be to loosen a portion of the shores, and cause an extra strain on others, the consequences of which may not always be foreseen.

There are objections attending the establishment of a basin with railways, to be used in connexion with a floating dock, which seem to have escaped the notice, or have not been regarded as important by the patentees and others who have considered the subject. We allude to the case where the tide has a great or variable range, as at Boston and Portsmouth. In establishing a basin, the first thing we have to decide upon is the unalterable level of its bottom. If it is placed so low that the dock vessel in it can always go in at high water, we must get the vessel ashore, and raised, by an incline plane or other means, to a very considerable height to be out of the way of high spring tides. To show this, we must suppose the basin to be located at Boston, where we have more extensive records of the tides than we have at any of the adopted sites; we will fix the bottom of the basin at 20½ feet below the top of the present stone dry dock at the navy yard in Charlestown, which would be very nearly 14½ feet below the average high water of neap tides. The balance dock, with a heavy ship of the line, would draw 14 feet of water, leaving six inches excess of draught for safely hauling the dock in and

grounding her upon the bottom. It appears by the record of the tides, there never would be more than 39 out of 1,205 tides that would fall below this average of neap tides; and it also appears that there would be 24 tides in the tidal period that would rise above a level of two feet six inches under the coping of the stone dock; and as the keel of the ship should generally be elevated two feet six inches above the ground to allow repairs on it, the ship must be raised by inclined railways, or some other method, to a height of 13 feet 6 inches, or to a level even with the present coping of the stone dock.

The variation of the ocean tides at Philadelphia and Pensacola is comparatively small; but other causes may act at those sites, such as floods and gales of wind, operating in a similar way to the common tide, causing trouble and expense in getting ships on land. And if the works are to be established, allowing for their variations, it is the same thing as if they were constant, and become a perpetual charge for all time to come.

Another element which tends to discourage the use of a basin with railways, where the value of the land is great, as at Philadel-
51 phia, is the extent of territory demanded for foundling the work, which is common both to the balance and the sectional dock, either requiring a basin of 300 feet square, exclusive of gates.

Should gates be necessary, the dimensions must be about 330 feet by 300, occupying an area of 99,000 square feet. This area could not be put to any permanent use, except that legitimately belonging to it. The ground occupied by the nine railways would have an area of 207,000 square feet, making, with a basin, 306,000 square feet, or 7 acres of land, all of which could not, as before observed, be used for any permanent purpose, if is is to be kept in readiness for the uses for which it is designed. There is another objection, the compactness of the ships thus placed in contiguity; which, in case of fire, would endanger the whole to one common conflagration.

The definite location of the dock at the various yards, with a view of adding the basin and railways, has not been attempted by the board; but on their recent visit to the Philadelphia and Portsmouth yards, sites were found which seemed suitable for carrying out the design to an extent limited by the interference with ship-houses and other structures, and requiring the enlargement of territory.

At Philadelphia, the yard is not wide enough, on the side next to the river, to give the room required for a basin, 300 feet square, with nine railways attached. There we only considered a suitable position for a dock to be used afloat, without a basin, the dock to be moored between the piers erected expressly for its use, and where the adequate depth of water should be obtained and sustained by dredging. The site alluded to is at the mouth of the present timber dock. This dock may be narrowed by widening the mast-house wharf, and continuing it, as well as that next east of it, out to the port-warden's line, or only to the points where the east corner of the east wharf would touch it.

Should a basin be required, the ground at the navy yard at Philadelphia will be found, without demolishing all existing build-

52 ings and most of the piers, and occupying more than two-thirds of the entire front on the Delaware, totally inadequate to the execution of either the plans submitted by Messrs. Dakin and Moody. The side tracks would likewise have to be dispensed with, and but the three front tracks retained, which would be fatal to the system as proposed. A basin, however, more limited in extent and adapted to but two railways, 225 feet wide by 272 feet long, with an entrance 150 feet for the sectional dock, might be constructed, by occupying the entire space between the ship and mast houses. For the balance dock, 173 feet by 300, with an entrance 100 feet wide, might, with less encroachments on the yard buildings, be located; the former occupying an area of 61,200 square feet, the latter 51,900 square feet. The value of these basins with *with* railways, contrasted with the complete design of Messrs. Dakin & Moody, would be, however, only as 2 to 9, taking only into consideration the number of ships which would be accommodated, while the quantity of land covered, including basin and railways, would be for sectional 107,400 square feet, and for the balance dock 98,000, instead of 297,000 square feet, the area required for carrying out the plan complete, neglecting in this comparison the space required if gates are to be added.

The pier wharves enclosing the dock, when in position to receive the ship, would extend from each side of the entrance to the port-warden's line, or as far as necessary for safety and convenience in mooring the dock. These locations, however, in relation to the existing extent of ground at the navy yard at Philadelphia, is better explained by reference to plans Nos. 1 and 2, herewith annexed.

At Kittery, two places were examined where it was supposed no difficulties would arise in forming a basin with railways. The location the most sheltered and best adapted was that occupying the southerly part of the channel, separating the navy yard from Jenkin's island, east of the east ship-house and mast-house; the water outside the east stone wharf being deep enough for docking ships of
53 the line, with either dock; and the water in the channel is favorable, being shallow, for the construction of a basin with railways, and limited only on the western side by interfering with the mast-house, and perhaps with the east ship-house. This location would involve the necessity and extra cost, if practicable, with the consent of the public authorities, of closing up the Jenkin's island channel, and the filling up of that passage, so as to form ground and a foundation for the connecting level railways. The other location looked at was at the new stone wharf, south of the office. At this place a complete basin, with railways, could be established in the shoal water in front of the southerly part of the timber dock, occupying a portion of the dock itself.

Should it be decided to use the floating dock here, without basin and railways, the site at the present landing place is evidently the best, as to cost and security from the action of the tide, of any site brought under our notice at this yard. The new wall before mentioned, extending from the landing place towards Portsmouth, could

be used without alteration for mooring the dock, building at each extremity piers for covering the end of it, as shown at A and B on plan No. 3. The plan shows the position of the dock on receiving a ship, after which it is hauled back in its berth, C D, where it would be secure from waves and currents on all sides but one. The exposed side could be very effectually protected from ordinary accidents by a floating breakwater, E F, which would bear against the piers, A B, and fenders hung from the sides of the dock when in its berth. The breakwater would answer many other purposes, one of which would be the preparing timbers for the vessels repairing in the dock.

Inquiry 14th.—"Finally, whether the basin and railways are necessary to the usefulness of a floating dock at Kittery and Pensacola."

The speculations of past inexperience on the advantages of marine railways, with a system so extended as to haul up an entire
54 navy, with a view of safe deposit, under sheds to preserve the vessels, and have them in readiness on relaunching for the exigencies of service, has long yielded to the test of experiment. Mr. Jefferson, when limiting our naval power to a few gunboats, not greatly exceeding in dimensions the launch of one of our line of battle ships, could not have anticipated the difficulties involved in the more expanded views and extended operations of the present day, and possibly comparing a floating vessel to a house on shore. The natural error as to the causes of decay being the same, may have led to the conclusion that similar modes of preservation would succeed. But the more acquired experience of the progressive information of later days has shown that vessels of war, once in their native element, are best preserved by immersion. To haul up and expose the timbers and plank which have been saturated by moisture to the drying process, is sure to produce rapid decay, and has condemned the policy, both at home and abroad, of "railwaying of vessels" for the objects of preservation.

There are occasions, however, when to repair thoroughly disabled ships, or to renew the favored model of a vessel, it would be advisable to place her on the ways of the navy yard. But this process, though of unfrequent occurrence, may be advantageously performed by one of the old methods of inclined railways, and involving much less expense than the basin and appendages of the dock, connecting that system with them.

Mr. Burr has submitted for inspection, which may merit more examination than we have been able to bestow on it, an improved marine railway with turn-table to distribute vessels on permanent ways, radiating from a common centre, with the addition of a cradle by which the vessel is drawn up and transferred to a level track on land, the great desideratum the sectional dock is supposed to have accomplished. This plan, however, involves the necessity of the
55 great depth of water, as with the sectional dock, which is requisite to get the ship on the cradle, and the very great length of rail to attain their object. Defects, which in the opinion of this commission were not calculated to remove the objections to all inclined planes. If a heavy body, however, has to be lifted from a

depression to attain a higher surface, it becomes a matter of fair comparison which process is simplest and cheapest, that of a structure with sufficient buoyant power to lift the body direct, and transfer it to a level railway, or that of a cradle on an inclined plane, which receives the vessel on it, and transfers it to the desired level. The first process involves the cost of an expensive basin, in connexion with the floating dock; the last, a more extended railway, with a cradle. They both require the same depth of water to work out their lifting problem. It is believed that calculation, as to less cost, will result in favor of Burr's marine railway. The practicability and superior advantages of all these operations are considered speculative and experimental, and those which involve too heavy expenditures to warrant recommendation or approval without conviction of positive favorable results much stronger than those, after most patient examination and mature reflection with which this commission are impressed.

In summing up the answers to the inquiries propounded by the Secretary of the Navy, the results in all the attainable qualities of floating docks would seem to incline to that of the balance, and to force this commission to conclusions in its favor, which have been arrived at by estimating, impartially and in detail, each and every property both docks were found to possess. In a summary of these, and in further confirmation of the opinions expressed, the balance dock, of equal capacity, was found to occupy less space, being but 100 feet wide, to 146 of the sectional; that at equal width it possessed more stability, and its stability increased with the weight as augmented; that it was simpler in its construction, assimilated in all its parts to the excavated stone dock, with altars, &c., on the
56 sides, on which the vessel could be as well secured by similar shoreing; that it drew less water, and required less water to dock a vessel; that it was unembarrassed by machinery, and required no extraordinary skill and vigilance to manage it; that in the form of construction (one solid wall, with no frame work) it was less exposed to injury, and most capable of resisting the conflict of the elements, and the rude shocks of collision with piers, ice, and other floating masses; that its camel properties were decidedly preferable, and that, as one body of smaller dimensions in width, it presented less resistance, and was more easily towed or moved by another power applied; that, lastly, as a caisson, in the event of the failure of what this commission unanimously and unhesitatingly pronounce as a mere experiment for naval purposes, the dock may be sunk and converted into the casing for the construction of a deep water stone pier, or other more durable structure better calculated to fulfil the object for which constructed.

Your commission are fully impressed with the opinion that both the sectional and balance docks may be made as strong as the respective plans of construction and materials used will permit. They do not doubt that both may, in ordinary times and with the protection of piers, be made to fulfil most of what they promise in docking and

undocking of vessels, and even of the largest class used for naval purposes. Though calculations on the process of displacement result in even the practicability of taking up a ship of the line, with her armament on board exceeding 5,000 tons in weight, the attempt is well calculated to inspire distrust; and should it fail from any of the causes, defect of stability, undulating movement of the dock, imperfect shoreing, or failure of machinery to perform its accustomed functions, it would prove fatal to both dock and ship.

There is an adherent defect in all floating structures. Independent of want of sufficient stability to sustain other heavier bodies
57 on them, they must be subservient to the element in which they float, and which is as movable in itself, and liable to be easily influenced by various disturbing causes, must impart the same oscillations at times, with which it is itself agitated, to the suspended weight of timber composing the mass. The science of ship building, in all its present supposed perfections, has never yet been able to resist or counteract the powerful effects of the elements in conflict.

The floating castles of naval powers—the "wooden walls" of Great Britain, shaped and framed with all the lights with which science has shed, and with all the skill which mechanics has imparted, are still found feeble structures when exposed to the rude shocks of the wind and the ocean in anger. What confident reliance, therefore, can at all times be reposed in structures with all of the imperfections, and few of the securities of ship construction—unwieldy and shapeless; in one instance, in many subdivisions; in another held together by a comparative feeble tie—when thus assailed? These occasions in which serious damages, if not entire destruction, are sustained, may be rare, but they may occur when the services of the dock are most required.

The same hurricane in our southern latitudes, of the effects of which those who have witnessed can alone form an opinion, which may destroy or render unfit the floating dock for immediate use, may likewise disable a fleet on the same coast, and in the midst of war, and which cannot be refitted for service until a new dock is built or the injured one repaired.

If the ships of war in themselves involve, as they evidently do, such immense expenditures, and it is a subject of so much solicitude to preserve and repair them, so as to involve the further expenditure for storehouses, yards, and docks, it would seem the most approved policy of a government, where it can safely be done, to construct these necessary appendages in a manner so durable as not to
58 incur additional expenditures and expedients for their constant preservation, reparation, and renewal.

These impressions naturally direct attention to the excavated stone dock, and suggest the opinion we feel in justice to the naval interests and to ourselves, to seemingly volunteer that no floating dock which has come under our examination can be advantageously substituted for or made to supercede it.

The old fashioned excavated stone docks, such as have for centuries

been in use use by all the the great naval powers of the world, and which have been in most successful operation, and universally approved at the American naval yards at Gosport and Charlestown, approximates, in all the objects to be accomplished, as near as all human inventions and ingenuity can, to a perfect dry dock, for the docking of ships of war of all classes. The granite platform on which the vessel is received rests on a firm and unyielding foundation. Its interior is so judiciously arranged with altars on the sides as to afford every convenience and facility for safe shoreing and scaffolding, and in a manner to remove all apprehensions of injury from unequal straining in all directions.

Their is ample room for all the operations of the mechanics engaged in repairing. It is light, and can be kept free from water; want of light or ventilation has never been considered a defect by the most experienced naval constructors engaged, and for years in superintending the operations in them, and not until recently has such a complaint been ever heard. It is simple and unique in all its parts and proportions, and docking and undocking of ships does not involve much labor or any extraordinary skill. It is filled by the current of the tides seeking a level, and it is exhausted or rendered a "dry dock," by the fall or receding of the same tide, with the aid of a steam engine and connecting pumps. The engine is not
59 part of its structure, and not properly chargeable to its cost, but is attached to the machinery in the navy yard, there performing daily functions as equivalent for the capital involved in its cost, and only placed on extra duty when the docking of a ship requires that the dock should be exhausted of the surplus water which the tide has not removed.

This dock is not exposed to injury from any cause; requires no superintendent to daily protect or watch its deteriorations and to preserve it, and it becomes available on all occasions. Its last and strongest recommendation is in the durability of the materials of which it is constructed, and rendered as permanent as the pyramids of Egypt. These structures have stood the test of ages, and so perfect are they in their original design and execution that no serious defect has ever been detected, or any important improvement or changes either suggested or seriously urged.

Whatever my be the seeming high cost of their first construction the excavated stone dock becomes, in the course of time and long use, the most economical, when contrasted with the proposed substitute floating structure of perishable materials, exposed to derangement and requiring total renewal at stated periods. A fair comparison of cost embracing in the elements of calculation the service and period of durability of each, and the results will be decided in favor of the excavated stone dock.—(See appendix D.) Such a structure for naval purposes, fulfilling all the objects for which constructed, and at all times available, would command the unanimous recommendation of this commission, with fewer doubts and misgivings than those which have embarrassed them in the investigations, the result of which they have the honor now to report.

60 We have the honor to be, very respectfully, your obedient servants,

JNO. DOWNS.
DAN. TURNER.
JAMES GADSDEN.
GEO. R. BALDWIN.
S. M. POOK.

Hon. JOHN Y. MASON, *Secretary of the Navy.*

APPENDIX D.

Comparative cost and durability of sectional and balance floating docks, with the railways, and of the excavated stone dock.

AT KITTERY, N. H.

Sectional dock of wood	$281,600	
Basin and railway	275,000	
Total for dock and basin		$556,600 00
Sectional dock of iron	527,000	
Basin and railway	275,000	
Total for iron dock and basin		802,000 00
Balance dock of wood	275,000	
Basin and railway	200,000	
Total for dock and basin		475,000 00
Balance dock of iron	403,000	
Basin and railway	200,000	
Total for iron dock and basin		603,000 00
Excavated stone dock, estimated cost		646,161 10

61 AT PHILADELPHIA.

Sectional dock of wood	$281,600	
Basin and railway	287,000	
Total for dock and basin		$568,600 00
Sectional dock of iron	527,000	
Basin and railway	287,000	
Total for iron dock and basin		814,000 00

Balance dock of wood	$250,000	
Basin and railway	200,000	
Total for dock and basin		450,000 00
Balance dock of iron	386,400	
Basin and railway	200,000	
Total for iron dock and basin		586,400 00
Excavated stone dock, assumed as the actual cost of the dock at Charlestown, Mass		677,689 78

AT PENSACOLA.

Sectional dock of wood, coppered	$365,600	
Basin and railway	367,000	
Total for dock and basin		$732,600 00
Sectional dock of iron	573,000	
Basin and railway	367,000	
Total for iron dock and basin		940,000 00
Balance dock of wood, with camel properties guarantied	400,000	
Basin and railway	250,000	
Total for dock and basin		650,000 00
62 Balance dock of iron	476,000	
Basin and railway	250,000	
Total for iron dock and basin		726,000 00
Excavated stone dock, estimated at		1,077,523 00

The durability of the excavated stone dock is as lasting as the granite of which it is constructed. That of the floating docks it is difficult to estimate with accuracy. One of the parties fixed the probable durability at 30 years. With the proper precautions, however, of paint, immersion, and personal supervision of necessary engineers and superintendents, this period may no doubt be extended. But all these would involve an annual expense, of which the excavated stone dock will be exempt; besides annual deterioration, which will require, likewise, a probable annual expense of reparation.

The estimated cost of the repairs of a ship, necessary for her preservation, is considered, in thirteen years, equivalent to the first cost

of the hull; and this commission see no difference in either the material or construction, which would be more favorable to wooden docks. The Ohio, which lay for many years alongside of the dock in New York, before she was refitted for a cruise, affords materials, now on record in the navy department, on which to form some idea of annual deterioration of wooden structure in such exposures.

BUREAU OF YARDS AND DOCKS,
June 18, 1847.

SIR: I have the honor to acknowledge the receipt, on the 15th instant, of the report of the commissioners on floating docks, dated June 3d, 1847, which has been referred to this bureau for an opinion.

The subject appears to have been carefully examined and
63 ably treated, and the board have arrived at the conclusion that, of all the floating docks submitted to their examination, the balance dock is best adapted to the use of the navy. The law authorizing the construction of floating docks is as follows: "That the Secretary of the Navy is hereby directed to cause to be constructed at each of the navy yards at Kittery, Philadelphia, and Pensacola, a floating dry dock for ships of the line, with basin and railways at Philadelphia, and reference thereto at the other places, on such plan as may be preferred by the Secretary of the Navy. The said dock at Pensacola to be completed with all possible despatch."

To obtain the most reliable information, in the selection of the best dock at either place, communications were addressed by this bureau, in conformity with your directions, to the following persons, proprietors of floating docks, viz: L. D. Dakin, J. S. Gilbert, Peter Von Schmidt, John Thomas, Samuel Rose, William Burr, and Samuel Loveland, who were invited to submit their respective plans and estimates to the department, in order that they might be laid before a board of commissioners, which had been appointed to examine and report upon their merits.

This commission, composed of two eminent engineers, two experienced naval officers, and one skilful and experienced naval constructor, was convened and furnished with instructions, embracing, among other things that might suggest themselves, a series of inquiries for their consideration. These points of inquiry have all been examined and noticed in the report submitted by the board. The several parties exhibiting plans have been before the commissioners, who patiently listened to their statements and arguments. The balance dock of Mr. Gilbert, and the sectional dock of Messrs. Dakin & Moody, are the two which seem to have been considered the most important, and to have received the fullest deliberation and judgment of the commissioners. It is not my intention now to enter fully into
the merits and different properties of either dock, but will
64 merely state that, although I agree with the board in most of the principles they assume, and in the arguments advanced, I cannot subscribe to all their premises and deductions. I have no

doubt that either dock can be made sufficiently strong and capacious to elevate a ship of the largest class for repair.

I entirely concur with the board in the opinion that the experiment should be made with wood. I also agree with them in opinion that it is not expedient to connect floating docks with basin and railways for hauling ships on and off the land. Nor can I be made to believe, until convinced by actual experiment, that either dock can be made safe and useful as a camel to take ships to and from the open sea.

The board assume that the sectional dock possesses greater facilities for repairing a ship's bottom than the balance dock, and that the latter possesses more ready facilities for repairing a vessel's upper works, and therefore the claims of each are equal in this respect. If the sectional dock affords better accommodations for repairing a ship's bottom, I assume that it is superior to the other, since it is chiefly to repair ships' bottoms that it is necessary to dock them; for their upper works can as readily be repaired without docking.

I cannot agree with the board in their opinion of the facilities for repairing the balance dock. If the rise and fall of the tide be sufficient to ground the dock for repairs, the work can be performed only when the tide is down; and like all other tide-work it must be frequently interrupted, and can be but imperfectly done where there is little or no tide. I am unable to perceive how the bottom of a balance dock is to be repaired at all, except by the construction of a railway to haul it up, (and that I consider quite out of the question,) or by the construction of a basin with gates, which would be but one vast excavated stone dock, required for the purpose of repairing the floating dock, but incapable of receiving a ship or vessel of any great draught of water. In this respect, also, I am of the opinion
65 that the sectional dock possesses a decided advantage over the balance dock. With regard to stability, I am of opinion that the sectional dock possesses the means of securing a greater degree of stability to the structure than the balance dock. It is true that of two docks of equal width, the balance would be the most stable; but the proprietors of the sectional dock make no such proposition. They extend their dock to a much greater width than the balance dock, and one of their objects in doing so is, it appears, among other advantages, to obtain the superiority in point of stability which they claim.

There is no stability in the tanks of the sectional dock when immersed. Any additional weight could not, by deeper immersion, impart additional stability, except what the end floats might afford. The end floats are intended, not only to control the entire dock and give it stability, but to act as security to the vessel on the dock, in case of a leak happening to any one of the sections. It is claimed and maintained that these floats are one of the principal improvements in sectional docks over the box or caisson principle of elevating a ship. Secured as they are in strongly-braced frame work, and so adjunted as to be raised or lowered at pleasure, they are thereby made to control the stability of the tanks on which the vessel rests,

and are a great security against accident. No such important security does the balance dock possess.

The board assert that in the sectional dock the shoreing will be similar to the shoreing when on the stocks, with the exception of the extremities, which cannot be so well secured, as the sections do not extend beyond the tread of the keel, depending entirely on the platform of the dock to rest the heels of the shores on, with cleats nailed on the sides and bottoms of the vessels to secure or confine the heads of the shores. This reasoning appears to me to conflict with one of the great objects and ends of the sectional docks, and one of its principal advantages as claimed over the balance dock, viz: that

66 any number of sections may be employed to lengthen the dock, so that the overhanging of the stem or stern may be braced and shored at any angle from the sections projecting forward aft the body of the vessel.

The law referred to directs the construction of a floating dock with basin and railways at Philadelphia, on such plan as the Secretary of the Navy shall select. In examining plans of the several docks, and the rights of the proprietors thereof to patents for basins and railways, I find the sectional dock of Dakin & Moody is the only one that possesses the right of constructing basins and railways in connexion with floating docks. That right is guarantied to them, it appears, until the year 1864, by the law of the land, although the proprietors of the balance dock assert that this right has been "pirated" from them. Whether the assertion be true or not, by reference to the Patent Office, the right seems to be legally vested in Dakin & Moody; and until the other party can establish his legal right to use the basin and railways, I do not think an agent of the government would be justified in contracting with any party for the construction of a basin and railway in connexion with a floating dock, other than with that party which is authorized by law to use them. In my opinion, no officer of the government should be the agent to violate its sacred seal of authority. It appears to me, therefore, that in the execution of the law, no discretion is left with the department to construct any other dock at Philadelphia than that with basin and railways, of the right for the construction of which Messrs. Dakin & Moody appear to be the sole patentees.

I would remark here, that in consequence of the law directing a floating dock with basin and railways to be built at the Philadelphia navy yard, no measures have been taken to procure the materials for the erection of the piers authorized by law at that yard, because, if the basin and railways shall be adopted, a different and more costly mode of construction will be necessary; and moreover, if the con-

67 templated dock, with or without basin and railways, is to be commenced without delay and constructed in that yard, it will be very difficult to build one of the authorized war steamers there at the same time, for want of room to lay out and execute work of both. The plan of mixing up contract with government work in the same establishment is very objectionable, and should be avoided, if possible.

Either all the materials and work should be under contract, or all be performed by the government.

The kind of dock to be built at Philadelphia is, in my judgment, settled by Congress to be a "floating dock for ships of the line, with basin and railways." The same authority also requires a floating dock to be constructed at Pensacola, with reference to basin and railways, "to be completed with all possible despatch." The law, however, does not require the department to build these docks by contract with the proprietors, and a question of expediency may arise as to whether they shall be built by contract or by the government. The right to do so having been previously obtained from the patentees, if the former be determined upon—that is, to build by contract, I would respectfully recommend that the offer of Messrs. Dakin & Moody be accepted for the dock at Philadelphia, inasmuch as, under the provisions of the law, no other dock can be built at that yard than one with basin and railway, the exclusive right to which, by patent, being vested by law in those gentlemen, as heretofore stated. And as the dock at Pensacola is required by the law to be completed with all possible despatch, I also recommend the acceptance of Mr. Gilbert's offer for the construction of a balance dock at that place, with reference to basin and railways. If, however, the department should determine that the docks shall be built by government, I then respectfully suggest that negotiations be forthwith entered into with both parties, to ascertain the terms upon which they will re-
68 spectively dispose of their several rights to the government for Philadelphia and Pensacola, this point of the circular not having been satisfactorily responded to, and that all further proceedings on the part of the government toward the execution of the law be suspended until the terms of the parties shall have been ascertained. In consideration of the various and conflicting opinions entertained as to which of the two docks in question possesses superior advantages over the other, and in further consideration of the decided opinion expressed by the late board in favor of stone docks, in which I fully concur—and I believe I may say that all connected with the naval service, civil or military, with one or two exceptions, entertain the same opinion—I would respectfully suggest that all further action in reference to the dock at Kittery be suspended until the pleasure of Congress shall be known, after a report shall have been made to that body of the course pursued by the department, and the progress made in the execution of the law of the last session with reference to the docks authorized at Philadelphia and Pensacola.

Although Congress limited the department in its selection to floating docks, and although it was not incumbent on the board to enter into a comparison between stone and floating docks, as it formed no part of their instructions, yet I cannot forbear to express my entire concurrence in the premises assumed, the arguments used, and the conclusions arrived at by the board in the decided preference they have expressed in favor of stone docks. Our experience with respect to the present stone docks proves that in fourteen years, the time since they have been completed, the costs of actual repairs,

both at Boston and Norfolk, have averaged about $500 a year only for each dock; the expense in both case being cause wholly by the decay of the gates and other wood work, which was constructed from the best seasoned materials, which have been partly immersed
69 under water, and as little exposed to decay and deterioration as a floating dock would be under the most favorable circumstances.

If, then, the data of the board be correct, that a wooden structure of the kind in question consumes its first cost in repairs once in thirteen, or even allowing fifteen years, it will be seen that in the end the stone dock will be by far the most economical. These facts prove clearly to my mind that notwithstanding floating docks may be profitable to the owners, and necessary and useful for the merchant marine, where vessels are being daily taken on and off for repairs, still, for the naval service, requiring the repairs of large and heavy ships-of-war, and where occasions do not frequently occur for docking, the permanent stone dock will be the cheapest, the safest, and the best.

I return herewith the report of the board, and have the honor to be, very respectfully, your obedient servant,

JOS. SMITH.

Hon. JOHN Y. MASON,
Secretary of the Navy.

NAVY DEPARTMENT, *July* 8, 1847.

SIR: By the act of Congress approved March 3, 1847, entitled "An act making appropriations for the naval service for the year ending the 30th June, 1848," the Secretary of the Navy is directed "to cause to be constructed at each of the navy yards (at Kittery, Philadelphia, and Pensacola,) a floating dry dock, for ships of the line, with basin and railways at Philadelphia, and reference thereto at the other places, on such plan as may be preferred by the Secretary of the Navy; the said dock (at Pensacola) to be completed with all possible despatch, and the sum of fifty thousand dollars is hereby appropriated towards said dock at Kittery, fifty thousand dollars towards said dock at Philadelphia, and two hundred and fifty thousand dollars towards said dock at Pensacola, out of any money in the treasury not otherwise appropriated."

70 After taking the measures which were deemed best calculated to enable me to make a selection of the plan of a floating dock which should be preferred, I found the choice limited to plans of floating docks. They are both patented inventions, and the department could not adopt and cause the construction to be done on either plan without infringing the rights vested in the patentee, unless a satisfactory arrangement could be made for its use.

The patentees have each respectively declined to sell or grant to the department the right to use their patent rights, or to permit their use, except by contract made with them for the construction of the works. As the plans are patented, competition is excluded, and the prices proposed by each exceed the appropriations.

By the 6th section of the act of Congress approved May 1, 1820, it is enacted "that no contract shall hereafter be made by the Secretary of State, or of the Treasury, or of the Department of War, or of the Navy, except under a law authorizing the same, or under an appropriation adequate to its fulfilment.

I respectfully request that you will furnish me with your opinion, at your earliest convenience on the question, "whether the Secretary of the Navy has authority by law to enter into contract for the construction of the floating docks, with basin and railways, at Philadelphia, and reference thereto at the other places under the circumstances stated.

I am, sir, very respectfully, your obedient servant.

J. Y. MASON.

Hon. NATHAN CLIFFORD,
Attorney General, &c.

ATTORNEY GENERAL'S OFFICE, *July* 12, 1847.

SIR: I had the honor to receive your communication of the
71 8th instant, requesting my opinion, whether the Secretary of the Navy has authority, by law, upon the statement of facts therein contained, to enter into a contract for the construction of certain floating dry docks specified in the act of Congress approved 3d March, 1847.

By the aforesaid act of Congress, entitled "An act making appropriations, for the naval service for the year ending the 30th June, 1848," the Secretary of the Navy is directed to cause to be constructed, at each of the navy yards at Kittery, Philadelphia, and Pensacola, a floating dry dock for ships of the line, with basin and railways at Philadelphia, and reference thereto at the other places, on such plan as may be preferred by the Secretary of the Navy; the said dock at Pensacola to be completed with all possible despatch, and the sum of fifty thousand dollars is hereby appropriated towards said dock at Kittery; fifty thousand dollars towards said dock at Philadelphia, and two hundred and fifty thousand dollars towards said dock at Pensacola, out of any money in the treasury not otherwise appropriated.

It appears from the statement of facts in your letter, that such measures have been adopted as were deemed best calculated to elicit the necessary information to enable the department, in pursuance of the directions of said act, to make a selection of the preferable plan for the construction of the said docks. It turns out, however, upon investigation, that the choice is limited to two patented inventions, neither of which can be adopted without infringing the rights vested in the patentees, unless a satisfactory arrangement can be made for their use. It further appears that the patentees have each respectively declined to sell or grant to the United States authority to use their patent rights, or to permit their use, except by contract made with them for the construction of the works. Competition, of course, is excluded, and the prices proposed by the patentees exceeds the amount of the appropriation in each case.

72 The single question propounded to me on this statement of facts is, whether the Secretary of the Navy is authorized to contract for the works at a price exceeding the appropriations made by Congress.

If the appropriations were adequate to the completion of the work at either place, no doubt could be entertained of the authority of the department to contract for its construction. Confining my opinion, however, to the statement of facts on which it is requested, it is very clear that no such authority exists. The case as stated in your letter is brought directly within the prohibition of the sixth section of the act of Congress of the 1st May, 1820, which provides that no contract shall hereafter be made by the Secretary of State, or of the Treasury, or of the Department of War, or of the Navy, except under a law authorizing the same, or under an appropriation adequate to its fulfilment.

It is not pretended that the act making the appropriations contains any words authorizing a contract for the construction of the works, and as the amount appropriated is confessedly inadequate to the fulfilment of the contracts, if any should be made, it is manifest that the authority does not exist. The prohibition is too explicit and comprehensive to be overcome by any rule of construction known to the law.

Whenever Congress has intended a departure from the salutary rule contained in the act of 1820, the authority to contract, it would seem, has been conferred by express words. Several cases might be referred to in confirmation of this remark. Take, for example, the act of 14th April, 1842.—5 Statutes at Large, 472. In that case the Secretary of the Navy was authorized "to enter into contract with Robert L. Stevens, for the construction of a war steamer," though the appropriation made at the time was clearly insufficient to complete the work, the authority to contract being expressly conferred, the law of 1820 could not apply. So again, in the naval appropria-

73 tion act of 10th August, 1846, "the President is authorized to construct by contract any vessels or steamers for the public service, when, in his opinion, the same can be done with equal efficiency and on terms more economical than in the present navy yards."

The act providing for the building and equipment of four naval steamers, approved 3d March, 1847, affords the most ample proof that the last Congress concurred in this view of the subject. The second section of that act makes it the duty of the Secretary of the Navy to accept the proposals of E. K. Collins, and to contract with him and his associates for the faithful fulfilment of the stipulations therein contained. Other examples might be cited to illustrate the point, but it is deemed unnecessary, as those already given, when taken in connexion with the express language of the act of 1820, appear to be conclusive.

Doubtless, it is very desirable that the works should progress immediately, if it be practicable without a violation of law. The intention of Congress in this respect is very clearly indicated in the

act making the appropriations. As one mode of avoiding the present embarrassment, allow me to suggest that the amount appropriated may be expended, if necessary for that purpose, in preparing the sites, or in purchasing and collecting the materials, with a view to the completion of the works under the future direction of Congress. The object of the law of 1820 was to prohibit the executive departments from involving the government in contracts for the payment of money beyond the amount appropriated by the law-making power. No one can doubt the authority of the department to expend the amount set apart by Congress for the purpose specified in the appropriation act. It must, however, be expended in pursuance of the directions of law, and without committing the public faith beyond the amount already sanctioned by Congress.

I have the honor to be, respectfully, sir, your obedient servant,

NATHAN CLIFFORD.

Hon. J. Y. MASON, *Secretary of the Navy.*

74 And these complainants further show that the Secretary of the Navy, for the reason stated in aforesaid report, dated 21st December, 1847, declined to make selection of any of the proposed plans, and was unwilling under the privileges and grants of the law to enter into a contract with any of the parties without further legislation of Congress, as by reference to the aforesaid report of said Secretary of the Navy, will more fully and at large appear.

And these claimants further show, that by an act of Congress passed August 3d, 1848, (section 3, chapter 3, volume 9, page 270, Statutes at Large,) it was enacted as *as* follows, to wit:

"SEC. 3. *And be it further enacted.* That in the execution of the act approved March third, eighteen hundred and forty seven, making appropriations for the naval service, &c., for the year ending the thirtieth of June, eighteen hundred and forty-eight, directing among other things the construction of floating dry docks at the navy yards at Philadelphia, Pensacola, and Kittery, and in pursuance of the reports in favor of the the two plans hereinafter named as best adopted to naval purposes, made by a board of officers appointed to examine all the plans, and by the Bureau of Yards and Docks, the Secretary of the Navy is hereby directed forthwith to enter into a contract with Samuel D. Dakin und Rutherford Moody, for the complete construction within a reasonable time from the date of the contract, of a sectional floating dry dock, basin and railways at the navy yard at Philadelphia, according to the plan and specifications submitted by them to the Navy Department; and also to enter into a contract with John S. Gilbert and Zeno Secor for the complete construction within a reasonable time from the date of the contract, of a balance floating dry dock, basin, and railways at the navy yard at Pensacola, according to the plan and specifications submitted by them to the Navy Department; and also to enter into a contract with one or the
75 other of the respective parties above named, for the complete construction within a reasonable time, from the date of the contract, at the navy yard at Kittery, of a floating dry dock, basin,

and railways, upon either of the above named plans that the said Secretary may prefer as best adapted to said yard; the said works at each yard to be of the largest dimensions proposed in said plans and specifications: *Provided*, that in each case such contract can be made at prices that shall not exceed by more than ten per cent. the prices which have been submitted by either of the said proprietors to the Navy Department for a floating dry dock on either of said plans and for the basin and railways of the dimensions aforesaid, at any of said navy yards: *and provided further*, that the said Secretary shall also, by further contract with said parties enlarge the dimensions of said works at each yard to a capacity sufficient for docking war steamers of the largest class, at least three hundred and fifty feet in length, if the dimensions above mentioned should not be found adequate for that purpose."

And these claimants further show and allege, that in and by said last-mentioned act of Congress said Secretary of the Navy was authorized by said act of Congress "to enter into a contract with one or the other of the respective parties above named for the complete construction, within a reasonable time from the date of the contract, at the navy yard at Kittery, a floating dry dock, basin, and railways, upon either of the above-named plans that the said Secretary may prefer, to be of the largest dimensions proposed in said plans and specifications."

And these claimants further show and allege, that in pursuance of said act of Congress, mandatory on said Secretary of the Navy, he did select these claimants, John S. Gilbert and Zeno Secor's dock, as will more fully and at large appear in and by a certain contract made by said Secretary of the Navy with these claimants, and also in and by the records of said Navy Department, which these claim-
76 ants pray that certified copies of said records in relation thereto may be procured by the order of this court, and filed with and as a part of this petition.

And these claimants further show and allege, that in and by said act of Congress aforementioned said Secretary of the Navy was authorized to enter into said contract upon either of the above-named plans that the said Secretary may prefer, to be of the largest dimensions proposed in said plans and specifications: provided, that in case such contract can be made at prices which have been submitted by either of the said proprietors to the Navy Department for a floating dry dock on either of said plans, and for the basin and railways, of the dimensions aforesaid, at any of said yards: and provided further, that the said Secretary shall also, by further contract with said parties, enlarge the dimensions of said works at each yard to a capacity sufficient for docking war steamers of the largest class, at least three hundred and fifty feet.

And these claimants further show and allege, that said Secretary of the Navy did fail to carry out the provisions of said act of Congress by prescribing and inserting that in said contract made by said Secretary of the Navy with these claimants in this respect, to wit, in insisting and coercing these claimants in the making of a contract of a

much larger dimension than proposed in said plans and specifications; whereas said act of Congress only allowed said Secretary of the Navy to enter into said contract of the largest dimensions proposed in these claimants' plans and specifications that they had furnished, as will more fully and at large appear by reference to the plans and specifications hereinbefore in this petition contained, fol. , and the plans and specifications of said contract hereinafter contained. See folio.

Whereby these claimants were put to much cost, trouble, and expense, and were required and did pay, lay out and expend a
77 large amount of money, a detailed account of which is hereto annexed to this petition, which these claimants do respectfully submit should be repaid by the defendants, said United States, to these claimants.

And these claimants further show and allege, that in the preparation of their said plans and specifications, and in and by their frequent attendance at Washington and other places, in relation to the construction of said dry dock at Kittery, Maine, they had paid out and expended a large amount of money and had used up a large amount of time, to them of great value and importance, and that some time elapsed after the selection of these claimants' dock under said afore-mentioned act of Congress, and having thus made said expenditure of time and money, and after said selection of said dock aforesaid of these claimants, and before said contract was entered in by these claimants and said Secretary of the Navy, they had by reason of the passage of said act of Congress, hereinbefore set forth, and the selection of these claimants' dock by said Secretary of the Navy made arrangements and contracts for the faithful and successful carrying out of said contract according to the plans and specifications that had been furnished by these claimants.

And these claimants further show and allege, that in and by these plans and specifications, hereinbefore set forth, these claimants did propose to sheath the dock at Kittery with wood and "felt and tarred sheathing," and did therein state in said plans and specifications the exact price which they would contract to build said dock with this description of sheathing, and also did state their reasons for not considering copper sheathing necessary at said Kittery, but these claimants did recommend that copper should be used on the docks at Pensacola, and on the two others, as in and by said plans and specifications hereinbefore set forth will more fully and at large appear.

And these claimants further show that in and by the terms of the contracts for docks at Philadelphia and Pensacola, it was agreed
78 that they should be sheathed with copper, but as it will appear in and by said contract, the additional cost of sheathing said docks aforesaid with copper was allowed to these claimants, which said contracts were entered into before the said contract for the dock at Kittery was entered in, all of which will more fully and at large appear by reference to said contracts on file in the Navy Department, copies of which are to be found in Senate Executive Document No. 44, 32d Congress, 1st session.

And these claimants further show and allege, that after the selec-

tion under said act of Congress, by the said Secretary of the Na of these claimants' docks, that some considerable time did elapse fore said Secretary of the Navy did have prepared said contract and did give notice thereof to these claimants that he had said contract for building said dock at Kittery, Maine, ready for execution by these claimants, during which time and from the reasons and inducements hereinbefore set forth, and which these claimants claim and insist that they had a right to do, and they do therefore charge that they had a right to do, these claimants did expend much time and money, and did and had incurred much pecuniary responsibility for the purpose of fully, faithfully, and successfully carrying out said contract, according to the plans and specifications that they had furnished as aforesaid.

And these claimants further show and allege, then when said contract was presented to these claimants for signature and execution, it appeared that in and by said contract that said dock at Kittery, Maine, was to be sheathed with copper, and that said Secretary had failed to insert the price of said sheathing with copper, which these claimants did insist then, and do now insist and charge as being in violation of said act of Congress aforesaid, and not in accordance with the plans and specifications of these claimants, as will more fully and at large appear by reference to said act of Congress, and said plans and specifications.

79 And these claimants further show and allege, that having thus expended so much time and money, and having also incurred much pecuniary responsibility for the purpose of carrying out said contract for the Kittery dock, and believing then that said proposed contract by said Secretary of the Navy was in violation of said act of Congress, and not in accordance with these claimants' said plans and specifications, did most solemnly protest, and thus solemnly protesting, and from the aforesaid reasons, and from the belief that if they did not sign said proposed contract that they would not get any, did sign said contract, and thereby they were obliged to submit to great loss and damage, and believing in the justness and faith of the United States, these claimants did, under said protest aforesaid, enter into a contract in the words and figures following, the original of which is on file in the Navy Department, which these claimants pray a certified copy may be ordered from said Navy Department, and filed as a part of the petition:

CONTRACT FOR THE CONSTRUCTION OF A DRY DOCK, BASIN, AND RAILWAY AT KITTERY, MAINE.

This agreement, made this eleventh day of November, in the year of our Lord one thousand eight hundred and forty-eight, at the city of Washington, in the District of Columbia, between the government of the United States, by the Secretary of the Navy thereof, the party of the first part, and John S. Gilbert and Zeno Secor, of the city of New York, the parties of the second part, witnesseth: That whereas, by an act of the Congress of the United States, approved August

3d. in the year one thousand eight hundred and forty-eight, entitled "An act making appropriations for the naval service for the year ending the thirtieth day of June, in the year eighteen hundred and forty-nine," in the third section thereof, the Secretary of the Navy is directed forthwith to enter into a contract with Samuel D.
80 Dakin and Rutherford Moody for the complete construction of a sectional dry dock, with John S. Gilbert and Zeno Secor for the construction of a balance floating dry dock; for the complete construction, within a reasonable time from the date of the contract, at at the navy yard at Kittery, of a floating dry dock, basin, and railways, according to the plans and specifications submitted by the said proprietors of docks of the Navy Department, upon either of the above-mentioned plans the said Secretary may prefer, as best adapted to said navy yard; the said works to be of the largest dimensions proposed in said plans and specifications; and provided such a contract can be made at a price that shall not exceed by more than ten per cent. the price which has been submitted by the said proprietors respectively to the Navy Department; and in the third section of the said act it is further provided, that the Secretary of the Navy shall also, by further contract, enlarge the dimensions of said works to a capacity sufficient for decking war steamers of the largest class, of at least three hundred and fifty feet in length, if the dimensions should not be found adequate for that purpose; and the Secretary of the Navy in the execution of the aforesaid law, after mature deliberation thereon, and in consideration that the said parties of the second part will copper-fasten said dock at Kittery, according to the specifications for the Pensacola dock, hereto annexed, has determined to select, and does hereby select and adopt, the balance dock, basin and railways of Gilbert and Secor, parties of the second part, as best adapted for the navy yard at Kittery:

And whereas the proposals and specifications of the said Gilbert and Secor, parties of the second part, referred to in the act aforesaid, specify a dock, basin, and railway at said navy yard, capable of receiving and raising a ship-of-the-line of the first class of five thousand three hundred tons displacement. and a steam vessel
81 of three hundred feet long and seventy feet over the guards; and whereas the last proviso in the third section of the act aforesaid, makes it the duty of the Secretary of the Navy, by further contract with the said parties of the second part, to cause the said dock, basin and railway to be enlarged, should the plan and specifications before referred to not be found adequate for that purpose, to a capacity sufficient for docking and hauling on and off the ways war steamers of the largest class, at least three hundred and fifty feet in length, and, it is understood, of breadth in proportion; and whereas the dimensions described in said plan and specifications submitted by said Gilbert and Secor, parties of the second part, and referred to in said act, are not sufficient, and do not furnish such a dock and basin and railway as would be adequate to receive and raise, and to haul on and off the ways war steamers of the largest class above mentioned: and whereas the Secretary of the Navy has, therefore,

called upon the said Gilbert and Secor, parties of the second part, to submit a plan and specifications of an enlarged dock, basin and railway of a sufficient capacity to dock war steamers of the class aforesaid, at least three hundred and fifty feet in length, and of breadth in proportion; and the said Gilbert and Secor, parties of the second part, have accordingly submitted to him such a plan and specifications, which have been duly considered by the said Secretary, and have been signed by the parties hereto, and have been hereto annexed, marked 1, 2, 3, and 4, forming part of this contract. Now, therefore, it is mutually understood and agreed by and between the parties to these presents, that the price to be paid for the enlargement of the said dock, basin and railway shall be in proportion to their increased size in area, as compared with the price submitted by the said Gilbert and Secor for said works, in connexion with said first-mentioned plan and specifications, and that ten per cent. on that amount being allowed by said act, and required by said Gilbert and Secor, parties of the second part, shall be added to the said
82 price; that is to say, the price submitted by them in connexion with the said first-mentioned plan and specifications, referred to in said act, being the sum of two hundred and seventy-five thousand dollars for the dock, and the sum of two hundred thousand dollars for the basin and railway; and in case a floating gate is made to the said basin, the further sum of ten thousand dollars; the price of a dock, basin and railways of the enlarged dimensions embraced in the plan and specifications hereto annexed, of a capacity sufficient to dock and haul on and off the ways a war steamer of the largest class, at least three hundred and fifty feet in length, and of a breadth in proportion, the aforesaid price being increased in proportion to the increased area, and by the addition of ten per cent. to amount, shall be, for the balance dock four hundred and thirty-seven thousand three hundred and twenty-five dollars, and for the basin and railway two hundred and eighty-two thousand five hundred and eighty dollars; and for the floating gate to the basin the sum of thirteen thousand dollars; in all for said dock, basin and railway, and floating gate, complete in all respects, according to the plan and specifications hereto annexed, the sum of seven hundred and thirty-two thousand nine hundred and five dollars.

And the said Gilbert and Secor, parties of the second part, for themselves, their heirs, executors, administrators, and assigns, covenant and agree with the said parties of the first part, to construct and complete the said floating dock, basin and railway, and floating gate, together with all the machinery, fixtures, and apparatus necessary for successfully working the same, and for shoreing and securing vessels of each class aforesaid on the ways, according to the plan and specification hereto annexed, and with the materials specified therein of the best quality, within two years and a half from the first day of November, 1848, to the entire satisfaction of the Secretary of the Navy—the basin to be constructed at such place in the
83 said navy yard as he may select, and the said floating dock to be constructed at or near the said navy yard, and when completed to be delivered and put in said basin.

And the said government of the United States, by the Secretary of the Navy aforesaid, hereby covenants and agrees, to and with the said Gilbert and Secor, the said parties of the second part, their heirs, executors, administrators, and assigns, in consideration of the premises, and of the covenants and agreements herein contained, on their part to be performed, to pay to the said Gilbert and Secor, parties of the second part, their heirs, executors, administrators, and assigns, the said just and full sum of seven hundred and thirty-two thousand nine hundred and five dollars, in the manner following, namely: when bills certified by the superintending agent on the part of the said party of the first part, approved by the commandant of the said navy yard, shall be presented, showing that one-half of the lowest layer of the platform is laid and fastened, the sum of twenty-three thousand dollars;

That when the lowest layer of the platform is entirely laid and fastened, the further sum of twenty-three thousand dollars;

That when the second or middle layer of the platform is half down and fastened, the further sum of twenty-three thousand dollars;

That when the second or middle layer of the platform is entirely laid and fastened, the further sum of twenty-three thousand dollars;

That when one-half of the third or upper layer is fastened, the further sum of twenty-three thousand dollars;

That when the third or upper layer is entireiy laid and fastened, the further sum of twenty-three thousand dollars;

That when one-half of the whole under surface and four and a half feet high of the sides and ends are coppered, the further sum of twenty-three thousand dollars;

That when that portion of the dock is entirely coppered, the further sum of twenty-three thousand dollars;

84 That when half of the truss-beams are down and fastened, the further sum of twenty-three thousand dollars;

That when all the truss-beams are down and fastened, the further sum of twenty-three thousand dollars;

That when half of the frames and trusses are up and fastened, the further sum of twenty-three thousand dollars;

That when all the frames and trusses are up and fastened, the further sum of twenty-three thousand dollars;

That when the dock is launched, the further sum of twenty-three thousand dollars;

That when half the planking inside and out is on and fastened, the further sum of twenty-three thousand dollars;

That when the planking is entirely on and fastened, the further sum of twenty-three thousand dollars;

That when the caulking and coppering is finished up to twelve feet, the further sum of twenty-three thousand dollars;

That when the caulking and painting is entirely finished, the further sum of twenty-three thousand dollars;

That when the enclosing gates, engines, and pumps are in and finished, the further sum of twenty-three thousand dollars;

That when the workmen's platform, bilge chocks, centring beams

and wale shores are in, the further sum of twenty-three thousand dollars.

The payments on the basin and railway to be made on surveys as near the first day of each month as practicable, but no certificate to be given by the officer of the government for a less amount of work done than twenty thousand dollars.

The said payments to be made by the navy agent at New York, excepting and reserving from each of said payments twenty per cent. on the bills so approved as security for the faithful performance of the work; and if after the completion and satisfactory trial as
85 herein provided of said work, which said Gilbert and Secor warrant shall successfully dock and haul on and off the ways vessels of either class before named, the said twenty per cent. above reserved and retained, together with the balance remaining unpaid, shall be paid over to them in full.

And it is further mutually understood and agreed, by and between said parties, that no payment be made on this contract, beyond the appropriations now made for said work, until Congress shall have made further appropriations for the same.

And it is further agreed that all such materials as may have been purchased by order of the Secretary of the Navy, and delivered or to be delivered at said navy yard for said work, shall be received by said Gilbert and Secor, and paid for at the bills of cost thereof, and to be deducted from the payments to be made within the first year of the time herein specified for the completion of the work.

And it is further agreed that the said works shall be constructed under the supervision of a competent person or civil engineer appointed by the said party of the first part, who shall have power to reject and exclude any materials from said work which are not in accordance with said specifications hereto annexed, either in kind or quality, and who shall see that the said works are constructed in conformity to said plans and specifications, hereto annexed.

And it is further agreed that the said works shall progress in their several stages in the proper ratio of time in proportion to the time specified for the completion thereof, and shall not depart from the said plans and specifications hereto annexed without authority from the Secretary of the Navy; but if, in the course of the construction of said work, it shall be evident to the said Gilbert and Secor that advantageous changes and improvements can be made upon the said plan and specifications in consequence of the enlargement of
86 the structure or nature of the soil, the said Gilbert and Secor, on submitting said changes and improvements to the Secretary of the Navy, and receiving his sanction thereof, will be authorized to adopt the said changes and improvements, provided that each and every such change and improvement shall be wholly at their cost and expense.

And it is further agreed that the said party of the first part shall provide the vessel or vessels necessary for the purpose of testing the capacity of said works to dock vessels of the class aforesaid to the entire satisfaction of the Secretary of the Navy, within three months

after the completion of said dock, certified by the superintendent on the part of the United States.

And the said Gilbert and Secor further agree that in case they shall fail to execute the work herein agreed to be done on their part, and especially if the said dock, basin, and railway, after completion, shall prove insufficient to dock successfully vessels of the navy, according to their warranty aforesaid, then the said Gilbert and Secor shall refund to the treasury of the United States the sums of money which may have been paid to them under the contract; and they are to have the privilege of removing the materials which they may have used in the construction of the said dock, basin and railway, but the said materials are not to be removed in such case until the moneys so advanced shall have been refunded; and the said materials are to remain as an additional security for the performance of the contract, and to refund the said money so advanced, in case of failure as aforesaid.

And the said Gilbert and Secor, parties of the second part, do further engage and contract that no member of Congress, officer of the navy, nor any person holding any office or appointment under the Navy Department, shall have any interest or be in anywise concerned, either directly or indirectly, in any of the issues, profits, or receipts of this contract.

87 It is further agreed that the said Gilbert and Secor, parties of the second part, shall, on demand, give the said party of the first part their bond, with sufficient sureties, in the penal sum of one hundred thousand dollars, conditioned for the faithful performance, on their part, of this contract.

In testimony of all which agreements and stipulations, the parties above named have hereunto signed their names and affixed their seals, this eleventh day of November, anno Domini one thousand eight hundred and forty-eight.

J. Y. MASON, [L. S.]
Secretary of the Navy.
JOHN S. GILBERT, [L. S.]
ZENO SECOR. [L. S.]

Signed, sealed, and delivered in the presence of—
WILLIAM G. RIDGELY,
Witness to signature of J. Y. Mason and John S. Gilbert.
P. M. WETMORE,
Witness to signature of Zeno Secor.

No. 1.

Specifications of a balance floating dry dock, to be built of yellow pine, first quality, as may be procurable.

DIMENSIONS.

We propose to increase the outside dimensions to three hundred and fifty feet (350) in length, and to one hundred and five feet four

inches in breadth, the depth being thirty-eight feet three inches. The foundation will be composed of three layers of timbers; the two lower ones will be each one foot square, and each made tight independent of the other. The courses of timber which form the first or lowest layer of the platform will be made in three lengths; the first
88 begins with a piece of 45 feet, then one of 40 feet four inches, and then one of 30 feet. The second course begins with a piece of 35 feet, then another 35 feet, and then one of 45 feet 4 inches. The third course begins with a piece of 60 feet, and then one of 50 feet four inches. These dimensions are repeated throughout the length of the dock. They have five feet vertical scarfs, each scarf having 4 $\frac{7}{8}$-inch copper butt bolts 2 feet long. Each course is treenailed laterally with $1\frac{3}{8}$-inch locust; the treenails being two feet apart, fox-wedged, and reaching in two feet. Every seam in this platform is made about $\frac{3}{8}$ of an inch outgage and then caulked from above, with wedges of soft wood extending down 4 inches into every seam, making it a water-tight platform. The top of this layer is covered with felt laid in tar. This platform is seen in sheet A, figs. 2 and 5, letter *a*.

FASTENING.

The letter T, throughout the plans and specifications, stands for treenails; the letter B stands for blunt iron bolts; the letter C in black ink, stands for iron clinch and iron screw bolts; the letter C in red ink, stands for copper bolts.

The next or middle layer runs transversely as before, but longitudinally; it is composed of scarf-pieces of from thirty to forty-five feet in length, the scarfs in this layer being keyed. Each course is treenailed laterally every two feet, and down through and through with $1\frac{3}{8}$ inch locust, two feet apart, like the first layer; it is then caulked with wedges of soft wood. This course, as well as the one below, is of 12-inch square timber, except ten of the courses, which are 12 inches broad and eighteen inches deep, and the middle course, which is 16 inches broad and 24 inches deep; they may be termed keelsons. They jog down into the lower layer three inches along the whole length of the platform, and also project above three inches, (see sheet A, figs. 1 and 5, letter *b*, and sheet C, figs. 17 and 18, letter *e*.)

The third or upper layer of timbers are 16 inches deep by 28
89 inches broad; they are composed of two courses of timber, side by side, each 14 inches broad and 16 inches deep, locked, scarfed, keyed with live oak, 10 keys in each beam, 8 inches square, reaching down through. They are screw-bolted together with inch-iron, one bolt every four feet, and jogged over the said projections of the longitudinal courses; they are placed four feet apart from centres, and bolted down through and through with $\frac{7}{8}$ copper bolts two feet apart and clinched. They form the lower parts of the truss-beam, being Gilbert's patent clamp-bottom, (see sheet A, figs. 3 and 6, letter .)

THE THICK WORK.

The sides and ends are built up as far as $8\frac{1}{2}$ feet high, with thick strakes, the lower course all around being 18 inches deep by 12 inches thick, and is copper bolted with $\frac{7}{8}$-inch bolts one foot apart, down through and through the lower courses of the platform, and clinched, (see figs. 1 and 5, letter *f*.)

The next two courses all around of this thick work will be 12 x 12; the next course will be 12 x 15, and jogged three inches into the outer ribs; then, again two courses of 12 x 12, and one 12 x 15, jogged in as before. Each of these courses will be bolted down to those below it, with inch iron bolts, three feet apart, extending down three feet, (see sheet A, fig. 5, *g*, *h*, *i*, *j*, and figs. 6 and 13;) the sides and ends thus far up will be caulked inside and out with wedges of soft wood.

The whole under surface and sides and ends, $4\frac{1}{2}$ feet high, is next covered with felt laid in tar and sheathed with 32-ounce copper, fastened on with $1\frac{1}{2}$-inch composition nails. The structure may then be launched and built up in the water.

THE TRUSSED FLOOR TIMBER.

They are made in that form which may be termed double solid truss-beams, the lower truss (see sheet A, figs 4 and 5, letter *k*) being 16 inches square, the inner ends laying on a chock (*m*) 14
90 inches deep; this truss rises above the tight platform four feet at the middle line of the dock; the upper one (see sheet A, figs. 4 and 5, letter *h*) is 16 x 18 deep, making the depth of dock bottom $7\frac{1}{2}$ feet. They are placed four feet apart from centres, making 87 in the whole length of the dock. Between each truss-beam, and along the middle of the dock, there will be an iron clamp, five inches wide by three-fourths of an inch thick, passing over a keelson formed of four pieces, extending from the platform up to the line of the upper truss, running the whole length of the dock, and halved into the said trusses, (see sheet A, fig. 7, letter *i*.) These bands (see sheet A, figs. 10 and 11, letter *j*) pass down to the tight platform, and are bolted through the said keelsons with inch iron screw-bolts, one through each course. Each of the courses which form the keelsons is separately fastened one upon another, with inch iron bolts reaching down three feet, except the lower piece, (see sheet A, fig. 17, letter *k*,) which is fastened with $\frac{7}{8}$ copper bolts down 20 inches into the tight platform, there being two bolts through each truss-beam, and one between. The several parts of each truss *k* and *h*, and the chocks below them, (see sheet A, figs. 3, 4, 5, *m*,) will be separately bolted down through the parts below with inch iron bolts, three feet apart, diagonally, the bolts passing through all the parts down to the tight platform. Two of the beams, each of them 100 feet from the end of the dock, will be caulked, making a tank of 150 feet long across the middle of the dock, (see sketch sheet, fig. 5.)

OUTER RIBS.

The outer ribs of the sides and ends of the dock chambers are 12 x 12 inch timber, except the corner posts, which are 24 x 24 inch, placed one foot apart in the clear, (see sheet A, figs. 5 and 6, letter *n*, and sheet B, fig. 16, letter *n*.) They are hook-tenoned into the ends of the lower pieces of the truss-beams, (see sheet A, fig. 9, letter *o*,) and fastened with two one-inch iron screw bolts, passing
91 through the beam and tenon, and are also fastened through the thick work of the sides and ends with 1 $\frac{3}{8}$-inch locust treenails, two in each rib. The thick work is also butt-bolted through and clinched with $\frac{7}{8}$-inch copper, four bolts in each scarf. The ribs are also supported at their heels by stringers, (see sheet A, fig. 5, and B, figure 16, letter *i*,) 16 inches square, jogged two inches into each rib, and fastened by two one-inch copper bolts in each truss-beam, reaching down 21 inches into the tight platform.

The outer wall is also supported by a series of five parallel arches made in two thicknesses of 8 x 16 inch plank, and jogged into the outer ribs three inches, (see sheet A, fig. 5, letter *m*, and sheet B, fig. 16, letter *m*,) the lower ends of the arches being jogged into the stringer *l*, and fastened with one iron screw-bolt and two blunt bolts at each end.

The arches are also fastened through the outer ribs with 1$\frac{1}{4}$ locust treenails, one in every alternate rib. Each of the outer ribs, which are cut off by the windows and fastened to thick stakes 12 x 12, (see sheet A, fig. 5, letter *p*, and sheet B, fig. 16, letter *p*,) running along the outside of the dock, with $\frac{7}{8}$-inch iron screw-bolt; and that part of the arch which crosses the windows is fastened with screw-bolts of the same size, at distances of three feet apart. One half of the side outer ribs pass down between the truss-beams to the tight platform, and are dovetailed into the fore and aft stringer *l*, to which they are fastened with one-inch iron bolt, (see sheet A, fig. 9, letter *q*.)

SLOPING RIBS.

The inner ribs that form the frames of the sloping sides of the chambers are likewise 12 x 12 inch timber; they start from the tight platform at a distance of 25$\frac{1}{2}$ feet from the middle of the dock, and pass up on an angle of forty-five degrees, the upper ends passing between the outer ribs, to which they are fastened with an inch iron screw-bolt, (see sheet A, figs. 5, 8, and 14, letter *r*,) like the latter, they
92 are one foot apart; they are secured at their lower ends to the truss-beams by a hook dovetail, jogged 16 inches into the lower part of the truss-beam (see sheet A, fig. 5, letter *s*;) they have a shoulder of two inches that rests upon the top of the truss-beams, clamping the several parts together; four screw-bolts of inch iron pass through the dovetails, one through each part of the truss-beams; they are backed at their heels by a stringer (see sheet A, fig. 5, letter *t*) 16 inches square, running along on the top of the truss-beams, within the chambers, fastened with two iron inch-bolts in each truss-beam, reaching down to the platform.

They are also supported in front by stringers (see sheet A, figs. 5 and 14, letter *u*,) 16 x 24, bolted along the middle compartment of the dock, fastened the same as the other. They are also backed and supported by a sloping stanchion, 12 x 16, (see sheet A, fig. 5, letter *v*, and sheet D, fig. 19, *v*,) tenoned into the top of the truss-beam and passing up between two of them, supporting them on shoulders of two inches, and fastened by an inch iron screw-bolt reaching through and through two ribs. On each side of the heels and shoulders of these stanchions there are 8 x 16 inch clamps (see sheet A, figs. 5 and 8, letter *w*, and sheet D, fig. 19, letter *w*,) bolted upon the top of the truss-beams, with an inch iron bolt in each beam, and with the same above into the sloping ribs. These clamps are in lengths of 30 to 50 feet and key-scarfed, the scarf being screw-bolted; they are also fastened to the stanchions by screw-bolts of $\frac{7}{8}$ iron, and passing through and through each of them. There is a system of truss work connected with these stanchions and stringers, running the whole length of the dock; it is composed of scantling 6 x 16, jogged into the stanchions 2 inches, and bolted together with iron screw-bolts $\frac{7}{8}$ inch, framing passing through and through the trusses and stanchions where they cross. The trusses are keyed up with white oak wedges upon an oak chock. (See sheet D. fig. 19, letter *x*.)

93 UPPER CHAMBERS.

The upper chambers (see sheet A, figs. 5 and 6, letter *y*,) are 7 feet 4 inches wide at the top; their frames consist of the outer ribs of the dock as already described; the inner frame is formed of upright stanchions, 12 x 12, (see sheet A, fig. 5, letter *z*, and sheet C, fig. 17, letter *z*;) these stanchions pass up between every alternate sloping rib of the lower chamber; they are tenoned into the trussed beam, the tenon being 8 x 12, and fastened by a screw-bolt of inch iron reaching through the beam. (See sheet A, fig. 5, letter *a*.)

They are also supported on both sides where they pass between the sloping ribs, by clamps 9 x 16, (see sheet A, fig. 5, letter *a''*, and sheet C, fig. 17, letter *a''*,) and also by clamps at their heels of 12 x 16, (see sheet A, fig. 15, letter *b*, and sheet C, fig. 17, letter *b'*;) the clamps are in lengths of 30 to 60, and key-scarfed; the scarfs being fastened with inch iron screw-bolts. These clamps are jogged into the stanchions two inches, and fastened by inch iron screw-bolts passing through each stanchion. The lower clamps, *b'*, are fastened to the truss-beam by two one-inch iron bolts in each beam reaching down to the platform.

Between these upper and lower clamps, and connected with the stanchions, there is a system of truss work of 8 x 16 scantling, jogged into the stanchions two inches, and fastened by inch iron screw-bolts, passing through where the trusses cross the stanchions; it is keyed up at the ends against oak chocks, (see sheet A, fig. 5, letter *d'*, and sheet C, fig. 17, letter *d'*;) there is a 12 x 12 plate, tenoned along the top ends of the stanchions, (see sheet A, fig. 12, letter *e'*,) fastened by two $1\frac{1}{4}$-inch locust treenails passing through each tenon.

There is also a clamp 10 x 16 on the back of these stanchions, running along under the sloping ribs; it is screw-bolted through the stanchions and bolted to the sloping ribs with inch iron, one bolt in each stanchion and rib. (See sheet A, fig. 5, f'.)

94 Between each of these 12 x 12 stanchions, there is a stanchion 6 x 12, (see sheet C, fig. 17, letter f',) extending from between the clamps (a'',) up to the plate (e,) of the chambers; it is fastened at its heel with $\frac{7}{8}$ screw-bolts, and is tenoned into the under size of the plate and fastened with a treenail. Each cross frame of the side chambers being thus composed of the outer ribs, (n,) the sloping ribs (r,) and the stanchions of the upper chamber (z) is supported by a 12 x 12 inclined stanchion, (see sheet A, fig. 5, letter g',) halved on the side of the truss-beam near its end, and passed up under the sloping rib midway between the two lines of trussing, is fastened with two bolts of inch iron at both ends.

There are two 12 x 12 horizontal beams (see sheet A, fig. 5, letter h'') across each frame, and fastened to the outer ribs and to the stanchions of the upper chambers with iron inch bolts, and extending across the chambers to the inclined stanchions, (g',) bracing the lower chambers in two places every four feet along its whole length, as equally distant as the arches and truss work will permit. There will be a 12 x 12 beam across the upper chambers, five feet below the deck, fastened with $\frac{7}{8}$-inch iron screw-bolts. (See sheet A, fig. 5, letter i'.) There will be 87 of these frames in each of the side chambers.

TRANSVERSE BULKHEADS IN CHAMBERS.

Across each of the side chambers there are ten tight bulkheads; three of them at each end are 38 feet apart. The main pump-well in the middle of the chamber is 46 feet, and the two smaller pump-wells in each chamber about six feet; these bulkheads are made of six-inch plank as far up as the lower chambers, and above that height, reaching up to the tops of the chambers, (see sketch sheet X,) 13 of 4-inch plank, fastened to the frames of the lower chambers with $\frac{7}{8}$-inch iron bolts, and above with 10-inch iron spikes. The level of the dock longitudinal is secured by means of these bulkheads,

95 by pumping more or less water from one end of the dock than from the other while the dock is being raised or lowered. No use is made of them generally after it is pumped out. There are openings at the bottoms of the bulkheads, furnished with gates or valves for the passage of water to and from the pump-well. The general arrangement of the bulkheads, valves, and pumps in the chambers, and the number of gates in each side chamber, are shown in the sketch sheet X.

All the valves that open outside to admit water into the dock will be of composition; those for the passage of water through the bulkheads to the pump-well will be of mahogany.

There will be eight windows through the upper chambers, 12 feet above the under side of the dock bottom.

The plank on the bottom of the windows will be six inches, fastened with ¾-inch iron bolts to beams 8 x 12, tenoned into the outside ribs and into the stanchions of the upper chamber, and fastened with inch iron screw-bolts.

The tops of the windows will be planked with 4-inch plank, fastened on to 6 x 8 beams, tenoned into outside ribs and stanchions of the upper chamber.

The sides will be planked with the same thickness and fastened with 9-inch spikes. (See sheet C, fig. 16, letter *h'*, and sketch sheet X, 8.)

DECK OF CHAMBERS.

The tops of the chambers are decked over with 3-inch plank, the deck beams being 5 x 8 scantling, halved together and laid so as to cross diagonally, forming lattice bracing; the deck beams are fastened with ¾-inch bolts, and the deck with 8-inch iron spikes. (See sheet A, fig. 12, letter *k''*.)

PLANKING OF THE DOCK.

The outside ribs are planked up above the thick work with 4-inch plank, and fastened with 1¼ treenails through each rib; the
96 treenails are caulked or wedged on the outside. There will be three thick strakes, 12 x 12, running the whole length of the dock, one at the bottom and one at the of the windows, and one along the upper ends of the ribs, fastened with ⅞-inch iron screw-bolts through the ribs, one in each rib, (see sheet A, figs. 5 and 13, 13, letter *p*;) every butt in the planking will have two ¾ copper bolts as far up as 12 feet from the bottom of the dock, to which height the whole to be coppered with 32-oz. copper, as before. Above that height, the butt bolts will be of iron. (See planking on sheet A, figs. 5 and 13, letter *p'*.)

The outsides of the upper chambers will be planked with four-inch plank, and fastened in the same manner as above. (See sheet A, fig. 5, letter *r'*.)

The ends of the chambers will be planked up with six-inch plank, and fastened with treenails; the same on the sides; copper butt, bolted up to twelve feet. (See sheet A, fig. 6, and sheet B, fig. 16, letter *v'*.)

The sloping ribs are planked up with six-inch plank, alternately with a strake of 12 x 12 timber, of such form as to afford a step or altar to place the heels of the shores upon. (See sheet A, figs. 5 and 14, letters *a''* and *h''*.) This planking and the thick strake will be fastened with 1¼ treenails passing through the ribs, and ⅞ iron butt bolts, two treenails in each sloping rib; in the planking, the thick strakes will have one ⅞ iron bolt and one treenail in each rib.

All the planking above the thick work will be caulked with new oakum in the ordinary way of caulking new ships of the largest class. The platform for the workmen to stand upon will be of 2½ inch plank, laid on the fore-and-aft beams. (See sheet A, fig. 4, letter *h'''*.) The platform finished is seen at fig. 15, letter *k'''*; it will be fastened down with 5-inch spikes.

The dock will be furnished with a floating gate. It may be necessary to shorten the dock with such a gate when a ship-of-the-
97 line, with all armament on board, is to be taken up. It will be placed forward of the ship, in grooves across the bottom and up the sides of the chambers. It will be eight feet deep from the keel to the deck, and will be of the same form and proportions as that described for the basin. The fastening for this gate will be of iron.

The time which would be required for us to make and present in proper form a detailed estimate of the weight of the various materials to be used in the construction of the balance dock, would be very great—more, perhaps, than can be allowed us. We therefore give the result of our calculations without the details. The dock, when ready for use, will weigh five thousand tons net, of two thousand pounds.

As we do not understand it to be the intention of the department to haul ships ashore with their armaments on board, we think the depth of the basin, now presented by us, will be ample.

GATES.

There is to be a gate at each end of the dock, made of wood, and so arranged as to open and shut on a hinge extending across the entire length of the gate. (See sheet E, figs. 21, 22, and 25, letter *a*.) This bottom timber of the gate is 18 x 24 inches; the lower edge is half round, with the ends entirely rounded, so as to pass through a bit two feet on its face. (See same sheet, fig. 21, letter *b*, and figs. 23 and 27, figure 6, letter *d'*.) The sill-piece upon which the gate rests is 18 x 18 inches, the upper edge being hollowed so as to receive the botton timber of the gate. (See same sheet, figs. 24 and 26.) Both this sill piece and the bits are fastened to the end of the dock by one-inch copper screw-bolts, eleven bolts in each bit, and three feet apart in the sill piece. The frame of the gate will be of stanchions 8 x 12, (see same sheet, figs. 20, 22, and 25, letter *d*,) placed fifteen inches apart, reaching up to a line with the lower line
98 of the side windows, 22 feet above the bottom of the dock. The ends of the gate will be on an angle of 45 degrees, the end pieces, (see same sheet, figs. 20 and 22, letter *e*,) 18 x 24 inches. The stanchions are mortised into the lower piece of the gate, and into the slanting end pieces, the tenons being 8 x 8 square, and each fastened with copper-clenched bolts, of $\frac{7}{8}$ inch. (See bottom of figure 25.) The frame is supported by two trusses, one at the top and one at midway down. (See same sheet, figs. 20, 21, and 25, letter *g*.) Each truss is supported by five iron key-bands, 5 inches wide and $\frac{3}{4}$ inch thick, passing around the cord and arch of the truss. (See same sheet, fig. 20, letter *i*.) The ends of the arches and cords are screw-bolted together, (see same sheet, fig. 20, letter *k*,) with three iron bolts, one inch thick. These trusses are supported in their horizontal position by iron braces $1\frac{1}{2}$ inch thick. (See same sheet, fig. 25, letter *k'*.) The gates are planked up with

4 x 12 plank, and fastened as far up as twelve feet from the bottom of the dock, with 9-inch composition spikes, two through each plank in every rib, and above with iron spikes, the like number of spikes in each rib. The gate at the forward end of the ship is made to unship by means of a sloat in the bit. (See same sheet, fig. 27, letter *l*.)

There will be two wicket gates in each, 18 inches square. See same sheet, figs. 21 and 22, letter *m*. The timber which forms the frames of the end of the dock against which the gates close, is two feet square, the corner posts (see sheet A, fig. 6, letter *n*) are rebated to receive the end planking (*v'*) of the dock. The slanting post is also 2 feet square, (see sheet A, fig. 6, letter *r'''*;) it is tenoned into the post *p''*, the tenon being 8 x 8 inches, and reaching in 6 inches. This post (*r''*) extends down to the truss-beam, half of its thickness being cut away, leaving a shoulder of one foot resting on the top of the thick work (*q'*) to which it is fastened with 1⅞-inch
99 treenails, two through each thick strake, and one inch copper bolt is also driven in through each thick strake, two feet long, as it passes down to the truss-beam below. The corners are fastened by oak knees—side 12 inches, 12 inches on the face at the ends, and 20 through the throat, each arm being 5½ feet long, and bolted with 1⅛ iron bolts, twelve in each knee, reaching into the posts and thick work 22 inches. (The knees are seen sheet A, fig. 6, letter *q''*.)

The thick work is dovetailed at the corners of the dock, and each dovetail has a 1-inch copper bolt reaching through the post and clenched. (See sheet A, fig. 6, letter *q''*.)

J. Y. MASON,
Secretary of the Navy.
JOHN S. GILBERT,
ZENO SECOR.

WILLIAM G. RIDGELEY,
Witness to signatures of J. Y. Mason and John S. Gilbert.
P. M. WETMORE,
Witness to the signature of Zeno Secor.

No. 2.

SPECIFICATIONS FOR BASIN.

The stone basin will be 120 feet wide and 365 feet long, having on three sides walls of granite masonry 13 feet high, 6 feet thick at the bottom and 3 at top, battening 3 feet in the whole height.

The walls will be built up to low-water mark with split granite; above that height with granite well cut.

The depth of water in this basin, at high water, will be 10 feet over the projecting courses of stone on which the dock is to rest.

The foundation of the basin will be formed of round 12-inch
100 piles driven 4 feet apart and capped with 12 x 12 timber and 5-inch planking (see sheet G, figs. 40 and 41, letter *a*) secured to them in the firmest manner; the said piles will be driven until a ram weighing 2,200 pounds falling 30 feet will not move them more

than half an inch. There will be double this number of piles under the courses of granite projections. (See sheet G, fig. 41, letter *b*.) But if in the construction of the basin rock shall be found and piling be impracticable, then such other means of securing the foundation shall be adopted as the superintendent on the part of the United States and the parties of the second part shall deem the best, and which shall be approved by the Secretary of the Navy. The platform will be caulked with wedges of soft wood; four courses of hewn granite 12 x 12 will be laid in cement upon the platform along the middle of the basin, in the direction of its length. (See sheet G, fig. 39, letter *d*.) Two other courses 12 x 18 wide (see same sheet and fig., letter *e*) will be laid in the same direction on each side, 20 feet from the central courses, forming level projections or granite stringers on which to rest the dock.

The spaces between the courses of granite and the spaces out to the side walls are filled with concrete 6 inches deep. There will be three courses of stone across the bottom of the outer end of the basin; the inner course (see same sheet and fig., letter *d'*,) will be 12 inches thick and form a shoulder for the gate to bear against. The two outer courses (see same sheet and fig., letter *f*) will be 6 inches thick; all these courses will be fastened with $\frac{7}{8}$ copper bolts, two in each stone, (see same sheet and fig., letter *f'*,) driven down into the timber below. There will be a groove in the outer end of the side walls of the basin, 2 feet broad and 1 foot deep, to receive the boat-gate. (See same sheet, fig. 39, letter *g*.)

The basin will be enclosed with a boat-gate. This gate is represented in figs. 36, 37, and 37, sheet G. Its depth from the
101 under side of the keel will be 13 feet; its breadth on deck 12 feet; and its length 128 feet, reaching across the mouth of the basin, its ends fitting into the grooves (*g'*, fig. 39) in the side walls of the basin.

A cross section of this gate is seen at fig. 38, letter *h*, sheet G; the keel will be 2 feet broad by 16 inches deep; the ends or stern pieces will be 2 feet square, with an apron to back them 18 x 18 inches; the keelson will be 2 feet broad and 18 inches deep; the ribs will be 12 inches deep and 8 inches broad, placed 2 feet apart and jogged into the keelson. It will be planked up with 4 x 12 plank; the upper course or gunwale will be 12 x 24 deep, and in connexion with the deck-beams will form the dock frame.

The ribs will be fastened at their upper ends to this gunwale by inch iron screw-bolts. The deck frame is seen at fig. 37, letter *i*. The deck beams will be 8 inches wide and ten inches deep; they will be placed 4 feet apart from centres and cross diagonally; one set of beams crossing another, halved where they cross, the ends being let down flush into the thick gunwale; the deck plank will be 3 inches by 12. Half way between the deck-beams and the keel there will be beams across of 8 x 8 scantling, resting on clamps running the whole length. (See fig. 38, letter *j*.) There will be a wicket gate of two feet square, so arranged that one man can open and close it; the boat will be tree nailed and copper-fastened, as fully as the best

merchant vessels of like tonnage. It will be coppered with 24-oz. copper, up to 11 feet, and have all the necessary machinery and rigging for using it.

J. Y. MASON,
Secretary of the Navy.
JOHN S. GILBERT,
ZENOR SECOR.

Witness to signatures of J. Y. Mason and John S. Gilbert—
WILLIAM G. RIDGELY.

Witness to the signature of Zeno Secor—
P. M. WETMORE.

102 RAILWAY.

The middle bedway is formed of two courses of timber of 45 and 50 feet lengths, each course being 17 inches wide and 18 inches deep, scarfed and screw-bolted together, so as to form a surface of 34 inches, the depth being 18 inches. (See sheet F, figs. 1 and 5, letter *a*.) The side bedways are formed of two courses of timber 45 and 50 feet lengths, each course being 14 inches wide and 18 inches deep, scarfed and screw-bolted together. They are grubbed out so as to form a surface of two feet on their faces, with 4-inch flanges above on each side to form guides for the upper ways. (See sheet F, figs. 1, 2, and 5, letters *b*, *b*, *b*.)

The foundations of the bedways on the shore are made by driving two rows of piles 14 inches diameter and 3 feet apart, in the direction of the length of the ways, and capping them with cross-ties 16 x 16 inches, the ties 12 feet apart, and extending across the top of every third set of foundation piles which are tenoned into them 3 inches. (Figs. 1. 2, and 5, letter *d*.) Two courses of timber 15 inches deep by 17 broad, jogged down into the cross-ties 4 inches, and extending the whole length of the bedways, are next laid to receive the stone wall. (See figs. 2 and 5, letter *e*.) But if in the construction of the railway rock should be found and piling be impracticable, then such other means of securing the foundation shall be adopted as the superintendent on the part of the United States and the party of the second part shall deem the best, and which shall be approved by the Secretary of the Navy.

The stone wall will consist of two or three courses of granite, each block being 34 inches wide on its face and not less than 6 feet long, the upper and lower sides to be partially levelled or rough-hammered so as to lie firm in cement. (See figs. 2 and 5, letter *f*.)

103 The bedways will be cut into the back wall of the basin, so that their upper surfaces will be flush with said wall. They will pass up into the yard on an inclined plane of 1 foot 3 inches to 100 feet.

The bedways in the floating dock are of the same dimensions as those on the land, will be laid down upon the truss-beams at the outer end of the dock, and will be fastened to a permanent bedding on an

inclined plane, rising towards the inner end of the dock 1 foot 3 inches to 100 feet, so as to bring them on a line with those on the shore when the dock is made to rest on the bottom of the basin.

When the bedways of the dock are not under a ship, they will be hauled off with the cradle upon them, on to the shore bedways; the dock being raised so that the lower edge of the bedding under the ways will be on a line with the bedways on shore, (see fig. 7, letter *f*.)

The middle bedway will be fastened down to the timbers *e*, fig. 5, sheet F, with iron bars three-fourths of an inch thick by five inches wide, fastened at their upper ends to the middle bedway, and at their lower ends to the timber *e* of the foundation. These bars will pass between the two thicknesses of the middle bedway down through the stone foundation, and through the middle of the timbers *e*, and fastened with iron keys one inch thick and three inches wide.

The middle upperways of the cradle on which the ship was moved to the shore, is made of two courses of timber 16 x 17 inches broad; they are screw-bolted together, forming a surface of thirty-four inches, (see figs. 3 and 5, letter *g*.) The sideways are made of two courses of 12 x 16 inches, screw-bolted together, forming a surface of twenty-four inches, (see figs. 3 and 4, letter *h*.) Both the middle and sideways of the cradle are made of sections of about thirty-two feet in length; the sections of the cradle are fastened together by plates of iron two inches thick and six inches wide, by about twelve feet long, passing over the joints (in fig. 3, marked joints,) the
104 plates on one part lapping over those on the other; they are screw-bolted to the ways, being keyed together with iron keys three-fourths of an inch thick, by four inches wide, (see figs. 3 and 4, letter *i*.) The joints in the middle upperway (see fig. 3, letter *j*) are supported by plates ten inches wide by two inches thick, and keyed with iron 1½ inch thick by six inches wide. Across the top of the cradle-ways are ties (sheet K, figs. 3, 4, and 6) of wood 16 x 16 inches, placed eight feet apart, locked down over them four inches and fastened with screw bolts.

Between each of these ties there is one keel block sixteen inches broad by twelve inches deep, placed upon the middle way of the cradle. On every alternate tie there is placed an ordinary bilge-block, made to slide up to the vessel's bottom, where it is held by a pall working in a cast-iron rack.

These bilge blocks are also to be used in the floating dock when the cradle is not in use, (see fig. 6, letter *k*.)

There are also braces of wood 12 x 12 inches, (*m*, fig. 3,) jogged into the side and middle ways, where they are supported by chocks; these braces are jogged up four inches into the ties, as they pass diagonally across from one way to the other.

The cradle is also strengthened with iron rods 1¼-inch in diameter, (*n*, fig. 3,) passing from the middle to the side-ways diagonally, and made to tighten with connecting screw-swivels; where the iron rods are attached to the ways, there are in the plates of iron which fasten the section of the ways together, projections into which the ends of the rods are screwed, (see fig. 3, letter *l*.) The foundation of

the basin and railway will be of the most solid construction, according to the nature of the soil. The cradle is to be so arranged that it can be removed from under the ship, and replaced without
105 difficulty.

ENGINES, PUMPS, AND OTHER FIXTURES.

The engines, one on each side, (see *a*, sheet H,) will be horizontal and of 24-horse power, and placed on the guard, (*w'*, fig. 5, sheet A.) a plan of half of which is shown by fig. 16, same sheet.

The boiler (*b*, sheet H,) is of the locomotive kind, and placed at one end of the engine, with the furnace on one side. The pumps (*c'*, sheet H) are twenty in number on each side; they are made of plank, five inches thick, and fastened with inch iron screw-bolts, passing through and through all the parts; they are ten feet long, with 18 x 18 inches square chambers, and three-feet stroke; sixteen of the pumps will be placed in the main pump-well, directly under the engine, and two of them will be placed in smaller wells adjoining the main well (see *a'*, sheet H,) for these pumps and small well.

The upper and lower boxes (*e*, sheet H,) are to be of composition; the lower one is made to fit the chamber by cork placed in a groove, (*f*,) and the upper one is leathered, the ring (*g*) screwing down upon it. The valves are of the kind called butterfly valves; they are also of composition; their form is seen at (*h*.) The guide-rod (*i*) is of iron, and the connecting (*j*) is also of iron.

The gearing and shafting by which the pumps are driven is shown at *k*, the bevelled wheels *l*, the crank wheels *m*, the whole length *o'*, the clutches by which the pumps may be thrown out of gear *p*, section of clutch.

An elevation of one of the crank-wheels and pinions is seen at *q*. At the end of the shaft *n* is seen the windless *r*, by which the gates at each end of the dock are opened. The chains by which the gates are opened will be seven-eighths. The forward gate will be
106 hoisted perpendicularly out of the belts, by means of this chain and windlass, and then lowered down into the water when a vessel is to be hauled out of the dock, and again hoisted in its place when the dock is sunk to float the vessel. The pump will be so arranged as to pump out the dock, in raising a vessel, with one engine, by means of the conductor (12) sketch sheet. The engines and boilers, and machinery attached to them, will be enclosed with good houses, extending out to the guard *u'*, fig. 5, sheet A.) A section of the outline of the frame of the house is seen at *o'*, fig. 5, sheet A. The combings (*c'*) will be 6 x 12 deep, and the stanchions (*d''*) will be 4 by 6 scantling, placed two feet apart; the carlins will be 4 by 4, and the plank of the sides and top will be 1½ white pine. The guard (*e'*) will be of timber 12 x 12, and the beams (a^2) of the guard-deck will be 6 x 12, and the braces (b^2) underneath the guards will be also 6 x 12; the deck of the guard will be three inches.

The beams of the guard-deck will be tenoned into the thick strake (*p*) of the dock, and into the guard—the tenon being 4 inches and fastened with 1¼ treenails. The braces are to be tenoned into the

second thick strake (*p*) and also bolted through into the ribs of the dock. There will be a rail on each side of the dock five feet high. The whole surface of the dock, inside and out, above the lower parts of the windows, will be planed and painted with two coats of lead-color. The dock will be furnished with centring beams, (letter *d'*, fig. 5, sheet A.) It will also be furnished with solid bilge-blocks, (letter *k'*, fig. 6, sheet F.)

The wale-shoring, against the altars, will be furnished in accordance with the plans now in use in the stone dock at Norfolk or Boston. All the gates or valves for the passage of water will be geared, so that one man can open or close them. The dock will be
107 constructed in a workmanlike manner, and furnished with all the machinery for its successful operation.

J. Y. MASON,
Secretary of the Navy.
JOHN S. GILBERT,
ZENO SECOR.

Witness to the signatures of J. Y. Mason and J. S. Gilbert—
WILLIAM G. RIDGELY.

Witness to the signature of Zeno Secor—
P. M. WETMORE.

No. 4.

Specifications for the hauling apparatus for moving vessels from the dock to the bedways on the shore and back again to the dock, and also of the engine house.

The central bedways are to be extended forty feet from the end of the main ways, or 390 feet from the rear of the basin, into the house hereinafter mentioned, built to protect the cylinder and boiler. The extension will be constucted in the same manner as the main way, except that the piles will be driven five feet from centre to centre, and the walls will be laid up with split granite, in hydraulic cement. On the bedways will be placed a hydraulic cylinder of cast iron, (see plan No. 9, at A,) the piston of which is 15 inches in diameter, and the stroke 8 feet. The engines BB, to work the pump of the cylinder, are placed near each end of the top of the cylinder, and consist of two vertical cylinders, 16 inches diameter and 15 inches stroke, with starting bars and eccentrics; the cross-heads on a slide at right angles, and turning a shaft on which are the eccentrics that work the force-pumps. There are four force-pumps (CC) of 1½ inch diameter and six inches stroke.

108 The connexion between the pumps and hydraulic cylinder will be by means of pipes and valves of suitable size and strength. The boiler (EE) to supply steam to the engines is to be a locomotive boiler, having 85 tubes of two inches diameter and 9 feet long, giving a fire surface of 82i.89 feet. The boiler is to be supported by a suitable bed-plate of cast-iron, resting on a bedway and connected by suitable rods of iron with the haudraulic cylinder. Un-

der the boiler and on top of the bedways (FF) is placed a reservoir, to furnish water to the boiler, and the pumps of the hydraulic press. The cross-head (G) of the hydraulic press is to be of cast iron, 57 inches long, 30 inches wide and 18 inches deep. Two side-rods, (H) 4 x 12, of wrought iron, are to connect the cross-heads with the centre timbers of the cradle on which the ship is to rest, when to be drawn ashore. The side-rods are to be attached to the centre beams by two iron keys, 20 inches wide, 18 inches long, and 4 inches thick. The ends of the side-rods, and the centre timbers, are to have a mortise, 20 inches long and 4 inches wide, to receive the key; the keys are to be 3 and 6 feet from the ends of the centre timbers. Lugs, to connect the hydraulic cylinder with the bedway's lugs, of suitable size, are to be cast on the hydraulic cylinder (K;) and mortises, 8 feet apart, are to be mortised through the bedways (LL.) The mortises are to be 24 inches long and 6 inches wide. Cast iron keys, 24 inches wide, 6 inches thick, and 44 inches long, are to be placed in the mortises. Wrought-iron rods, 6 x 6 inches, and suitably formed to connect with the lugs on the cylinder and the cast-iron keys of the bedways, are to make the connexion between the cylinder and the bedways, (MM.)

The power of the hydraulic press, and the strength of the machinery above described, would be adequate to draw a ship of 5,300 tons. In case it should not be required to move a ship of that weight, the power and strength aforesaid are to be diminished in proportion.

109 One turn-table is to be constructed near the end of the centre bedway, for the purpose of turning the cylinder around on the ways, (see plan No. —;) to be built in the following manner, viz: piles 12 inches in diameter are to be driven for the foundation, (see plan FF,) which are cut off at 3 feet below mean high tide, and capped with timber 12 inches in thickness, (CT;) and a wall of stone is built up thereon to the same height as the wall of the ways, (G.)

The circle of the table (HH) is to be 10 feet in diameter, and an iron bar, $\frac{3}{4}$ x 3 inches, is to be laid in a circle on the stone wall, 6 inches from the edges and crossing the centreway wall. A cast iron plate is let in the centre of the table, one inch thick and ten inches in diameter, and a journal two inches in diameter inserted through the plate into the stone. The main ways are not laid over the space occupied by the table. Two pieces of oak timber, corresponding in size to the ways, are bolted together, and an iron plate let in and secured in the centre and at each end, at the crossing of the circle. This timber, or short way, is placed on the table, and the journals on the table, pass up through the centre of the plate and confine it to its position, and allows it to move around the journal on the iron bar and centre plate.

When it is required to turn the cylinder around, to shift its ends, to push a vessel off from the bedway upon the floating dock, it is slid on the table and turned around, as shown in the plan. A house is to be built for the protection of the cylinder and engines, over the

centre bedway, 30 feet wide, 46 feet long, and 12 feet high, (see ground plan L L.) The foundation is to be of cross foundation timber, 4 feet long and 5 inches thick, laid in a trench dug 3 feet below the surface of the yard. On the cross foundation timber, ranging timber, 12 x 20, is laid, and a stone wall is built up thereon, one foot above the level of the ground.

A brick wall eight inches thick is then built up twelve feet
110 in height. The roof is laid to pitch both ways, planked and covered with XX tin. Two windows are to be placed on each side, and a door in front and one on the side, of sufficient size to admit of the passage of the engines and boilers.

Rods of a suitable size will be attached to the cradleways, at the upper end, (M,) so arranged as to receive keys through the mortises in the bedway, to prevent the ship from slipping back when the hydraulic press is fluted.

J. Y. MASON,
Secretary of the Navy.
JOHN S. GILBERT,
ZENO SECOR.

Witness to the signature of J. Y. Mason and John S. Gilbert—
WILLIAM G. RIDGELY.

Witness to the signature of Zeno Secor—
P. M. WETMORE.

Know all men by these presents, that we, John S. Gilbert and Zeno Secor, as principals, both of the city and State of New York, and Rutherford Moody and James F. Secor, as sureties, of the city and State of New York, are held and firmly bound unto the United States of America, in the just and full sum of one hundred thousand dollars, lawful money of the United States, to be paid to the said United States, or to any person or persons, agent or agents, that may be duly authorized by the Comptroller of the Treasury of the United States, for the time being, to receive the same; to which payment, well and truly to be made and done, we bind ourselves and every of us, our and every of our heirs, executors, and administrators, in the whole and for the whole, jointly and severally, firmly by these presents. Sealed with our seals, and dated the fifteenth day of
111 November, anno Domini one thousand eight hundred and forty-eight.

The condition of this obligation is such that if the above bound John S. Gilbert Zeno Secor, Rutherford Moody, and James F. Secor, or either of them, their or either of their heirs, executors, or administrators, do and shall well and truly execute and fulfil, in all its stipulations, a contract which the said John S. Gilbert and Seno Secor have entered into with John Y. Mason, Secretary of the Navy, for and in behalf of the United States, for the complete construction of a balance floating dry dock, with basin, railway, and floating gate, at the navy yard, Kittery, agreeably to their contract, dated the eleventh

(11th) day of November, one thousand eight hundred and forty-eight, (1848,) for the use of the United States navy, then the above obligation to be void and of non-effect, otherwise to be and remain in full force and virtue in law.

JOHN S. GILBERT. [L. S.]
ZENO SECOR. [L. S.]
RUTHERFORD MOODY. [L. S.]
JAMES F. SECOR. [L. S.]

Signed, sealed, and delivered in the presence of—
P. M. WETMORE,

Witness to the signatures of John S. Gilbert, Zeno Secor, Rutherford Moody, and James F. Secor.

To the best of my knowledge and belief, the sureties named in this bond are good and sufficient.

CHARLES McVEAN,
United States Attorney.

And these claimants further show, that on the 26th February, 1849, Samuel D. Dakin, now deceased, for and on behalf of these claimants, did file in said Navy Department a protest which was in the
112 words and figures following, to wit: A certified copy of which these claimants request that the honorable court would require to be furnished by said Navy Department, and made a part of this petition.

"The consideration and decision of the Secretary of the Navy is most respectfully requested upon the following statement of the claim of the owners of the balance dock, for coppering the same at the navy yard, Kittery, in the State of Maine.

"In pursuance of an act of Congress, passed March 3, 1847, the Secretary of the Navy requested proposals to be made by the owners of the patent for the balance dock for the construction of a dock of that kind at the Kittery and other navy yards, to be laid before the board of commissioners appointed to examine the different plans. Such proposals were accordingly made by them, and a price stated for which such dock would be built at that yard, without being fastened or sheathed with copper.

"That the proposals were thus understood by the commissioners appears by their report itself, contained in Document No. 11 of the last session of Congress. That the owners also thus intended, is obvious from the fact that coppering was not mentioned at all in said proposals or specifications, and also that none of the docks before constructed by them had been copper fastened or coppered.

"The report of the commissioners, together with the proposals, plans, and specifications of the patentees, were laid before Congress at its following session, and on the 3d day of August, 1848, a law was enacted requiring the Secretary of the Navy to enter forthwith into contract with the owners of the balance dock, or with those of the sectional dock, as he might decide to be best adapted for the public interest, for the construction of a dock upon one or the other of those

plans at the navy yard in Kittery, 'according to the specifica-
113 tions contained in their proposals made under the act of March 3, 1847,' which had been examined and reported upon by the aforesaid commissioners, provided it could be done at a price not exceeding more than by ten per cent. the price named in said proposals; and provided also, that in case the dimensions named in said specifications and plans were not large enough for a steamer 350 feet in length, the Secretary should by further contract with the owners enlarge the same to that capacity.

"Under the authority, and by the direction of the aforesaid act of Congress of 3d August, 1848, the Secretary, after due consideration, decided to adopt the balance dock for the yard at Kittery, and in his report at the commencement of the present session he states that he had so decided, 'because that plan of dock had been recommended by the board of commissioners in 1847, and because it was less expensive and promised to be at least equally as useful as the sectional dock.'

"It thus appears that the recommendation of the commissioners, which was based upon the plan and specifications of the owners of the balance dock for an iron fastened dock, was the ground of its adoption by the department for the Kittery yard, as well as its greater economy and usefulness.

"On coming to the department for their contract, it was agreed, by stipulation between the owners and the department, that they were entitled to receive, under the law of 1848, the price named in their proposal of 1847, and, in addition thereto, a sum in proportion to the enlarged area, with ten per cent. upon the whole amount. But the department insisted that, in addition to the plans and specifications submitted by them to the commissioners in 1847—plans and specifications which, we respectfully contend, were plainly referred to and made the basis of the act of 1848—the contractors should not only copper-fasten their dock but sheathe it with copper without any compensation, and at an increased expense of at least sixty thousand dollars.

114 "It will be remembered that the contractors strenuously resisted this claim on the part of the department as being contrary to the express and specific terms of the law under which they presented themselves, and contrary to the intention of its framers; but they professed to be ready to do any extra work which should be required, by coppering or otherwise, upon receiving a fair compensation therefor.

"After protesting for two or three days against a demand so unexpected as well as unjust, the contractors were at last compelled to submit to it, under the impression that they would otherwise fail to obtain any contract at all. After the great expense to which they had been subjected by their protracted applications, and under a strong protest, they executed the contract now on the files of the department.

"They were induced to this course by the advice of friends, and with a firm reliance upon the sense of justice of the department to

restore them to their equitable and legal rights, after time should be taken to examine the laws and all the facts applicable to the case.

"After thus detailing the circumstances under which the contract was entered into, and stating the laws by virtue of which it was made, the contractors hardly deem it necessary to allude to the legal construction of the instrument itself, irrespective of those laws.

"But it is a striking circumstance that at the outset it embodies and recites the act of August, 1848, under which it was framed, and states the fact that the Secretary of the Navy is thereby directed to enter forthwith into contract with John S. Gilbert and Zeno Secor for the complete construction of the balance dock, 'according to the plans and specifications submitted by the proprietors thereof to the commissioners;' and immediately after contains stipulations at variance with and contrary to the spirit of the law. The terms
115 of the act thus quoted and embodied in the contract are plain, specific, and imperative. A departure from it, in any manner, by the department was not and could not have been anticipated by the contractors. And in that part of this instrument, where copper is first mentioned, it is expressly stated that in consideration that the contractors will copper-fasten (not sheath) their dock, therefore the department had determined to select and adopt that plan of dock for the navy yard at Kittery.

"Fastening with copper was thus the consideration, and the only reason as stated in the instrument, for the selection of this plan of dock—and sheathing does not appear, from it, to have been taken into consideration in adopting it.

"In conclusion, the contractors will only add, that coppering the balance dock was never spoken of or thought of by them at the time of making their proposals in 1847, nor at any other time up to their coming to the department for their contract last August; and, with the act before them, they had not the least idea that any requirement would be made of them by the department not recognized by that law, nor contained in their proposals of 1847. And they would as soon have expected to be met with a demand to fasten their dock with silver, and to sheath it with gold as to fasten and sheath it with copper.

"The expense of putting on 32-oz. copper all told will amount to about $58,000; and the contractors respectfully ask that the laws referred to and the facts alluded to may be carefully examined, and that a clause may be added to their contract, allowing them that sum, or whatever may be just and proper for the coppering.

"Respectfully submitted for the contractors.

(Signed) "S. D. DAKIN.

"Hon. J. Y. MASON,

"*Secretary of the Navy.*

"February 26, 1849."

116 And these claimants further show and allege, that to said protest filed as aforesaid, neither said Navy Department or said Secretary of the Navy did make any reply, which said omission

to make any reply these claimants believe arose from the time of said receipt by said Navy Department of said protest; the Hon. John Y. Mason, the then Secretary of the Navy, was then about retiring from the office of said Secretary of the Navy, as will more fully and at large appear by an indorsement on said protest, now on file in said Navy Department, which is in the words and figures following, to wit:

"This letter was not received, or if received at the department, was not brought to my notice in time for me to act on it. The contract with Messrs. Gilbert & Secor was made in execution of the directions of the act of Congress of August 3, 1848, and it was not my intention or wish to exact from the contractors any conditions more onerous than were embraced in their proposals which the law had adopted as the basis of the contract. If, on examination of the contract and the proposals, it shall be found that sheathing the floating structure with 32-oz. copper is exacted in the contract and was not a part of the proposals, eminently advantageous as it will be to the public interest in giving greater durability to the dock, it appears to me that justice will require that compensation should be made for the work and materials required beyond the proposals."

And these claimants further show that subsequently said protest of said Samuel D. Dakin, now deceased, was referred by the then Secretary of the Navy, Hon. William Ballard Preston, to the Bureau of Yards and Docks.

And these claimants further show that on the 3d April, 1849, said Bureau of Yards and Docks did make a report thereon, as it will appear by said report of said Bureau of Yards and Docks, now on file in said Navy Department, which these claimants request that this honorable court would require of said Navy Department a
117 certified copy thereof, to be preserved and filed as a part of this petition, will more fully and at large appear, and which was in the words and figures following, to wit:

BUREAU OF YARDS AND DOCKS,
9th April, 1849.

SIR: I have the honor to acknowledge the reference to this bureau for a report, of a communication from S. D. Dakin, esq., on behalf of the contractors, addressed to the Hon. John Y. Mason, Secretary of the Navy, dated 26th February, 1849, asking to be allowed compensation for copper sheathing the balance dock to be constructed at Kittery, Maine, under their contract with the Navy Department. The said communication bears upon it an indorsement by the Hon. J. Y. Mason, late Secretary of the Navy, dated March 29, 1849, in these words:

"This letter was not received, or if received at the department, was not brought to my notice in time for me to act on it. The contract with Messrs. Gilbert and Secor was made in execution of the directions of the act of Congress of August 3, 1848, and it was not my intention or wish to exact from the contractors any conditions more onerous than were embraced in their proposals which the law

had adopted as the basis of the contract. If, on examination of the contract and the proposals, it shall be found that sheathing the floating structure with 32-oz. copper is exacted in the contract and was not a part of the proposals, eminently advantageous as it will be to the public interest in giving greater durability to the dock, it appears to me that justice will require that compensation should be made for the work and materials required beyond the proposals."

I do not propose to reply to the arguments set forth in said communication, but briefly to state the facts in the case, so far as they are known to me, with my views thereon.

118 In 1847, Congress appropriated a sum of money to commence the construction of three floating docks with basin and railways upon the respective plans—(either or both as the Secretary of the Navy should select)—of Messrs. Dakin & Moody, and Messrs. Gilbert & Secor. These parties were called upon by the Secretary to submit plans, specifications, and proposals for constructing these works upon their respective plans, which were to be, and were submitted to a board of gentlemen, assembled for the purpose, for examination and report. These plans and specifications proposed to dock a ship of the line of 5,300 tons displacement, and a steamer of 300 feet in length. The examination and report were made and the balance dock was preferred by the board to the sectional dock, but for reasons which seemed to him satisfactory, the Secretary declined to enter into contract for either dock, and reported the case back to Congress the following session, with the reasons therefor, and his action in the premises.

In the 3d section of the act making appropriations for the navy, approved 3d August, 1848, the Secretary of the Navy is directed forthwith to enter into a contract with "Samuel D. Dakin and Rutherford Moody, for the complete construction, within a reasonable time from the date of the contract, of a sectional dry dock, basin and railways at the navy yard at Philadelphia, according to the plan and specifications submitted by them to the Navy Department; and also to enter into a contract with John S. Gilbert and Zeno Secor for the complete construction, within a reasonable time from the date of the contract, of a balance floating dock, basin and railways, at the navy yard at Pensacola, according to the plan and specifications submitted by them to the Navy Department; and also to enter into contract with one or the other of the respective parties above named, for the complete construction, within a reasonable time from the date of the contract, at the navy yard at Kittery, of a floating dry dock, basin and railways, upon either of the above-named plans that the

119 Secretary of the Navy may prefer as best adapted to said yard; the said works at each yard to be of the largest dimensions proposed in said plans and specifications."

The first proviso in this section fixes the price to be paid for said docks, &c., based upon the specifications of 1847, beyond which the Secretary could not go. The second and last proviso of said section directs the Secretary of the Navy by further contract, to enlarge the

dimensions of said works to a capacity sufficient for dock war steamers of the largest class, at least 350 feet in length.

Now it is quite manifest that the scantling and other materials set forth in the specifications of 1847, are not adequate for a dock capable of docking a war steamer of 350 feet in length, as required by this proviso. Admitting the materials as specified in 1847 to be insufficient for the construction of such a dock, it follows that the price is also inadequate and insufficient. What then is next to be done? Why clearly to make a new bargain. New plans and specifications must be called for, and determined on, and new prices agreed upon. It is submitted whether by a fair construction of this proviso, it does not supersede the *the* specifications of 1847, and confide to the Secretary a large discretion as to the materials to be used in these enlarged docks, adhering to the plans as well as the prices to be paid for the entire works.

Although opposed to these wooden docks for naval purposes, the the department, as I believe, was anxious to execute the law taking the 5th section and the proviso as a whole, according to its spirit and purport; and after calling upon the parties for new specifications and considering them, adopted the rule to increase the price in proportion to the increased dimensions of the works as authorized
120 by *by* the act of 1848. This being done, the materials, dimensions, and prices for the docks, &c., at Philadelphia and Pensacola were agreed upon.

It then remained to be determined which of tho two plans should be adopted for the navy yard at Kittery.

The Secretary selected the balance dock on condition that it should be copper-fastened and copper-sheathed as at Pensacola, to which the proprietors agreed, and the price for this dock, &c., was determined on, under the rule for enlargement, as adopted at Philadelphia and Pensacola.

There was no written protest to my knowledge. The parties objected to the copper as not embraced in their specifications and estimates of 1847, but the Secretary considered it important that such a structure, when used in salt water, should be coppered, and the contract was executed accordingly.

For the reasons before stated I am now, as at that time, clearly of opinion that the Secretary had a perfect right to make the contract as it was made, but by his indorsement, above referred to, he appears to entertain a different opinion. If he has, as he seems to admit, imposed upon the contractors onerous obligations, not contemplated by the law, nor intended by him, and you should be of the same opinion, the contractors would seem to have a claim in equity for renumeration for the copper, which under the rule adopted for establishing the price to be paid on these contracts cannot be paid in any other way that I see, but by asking an appropriation of Congress for that purpose.

I have the honor to be, with great respect, your obed't serv't,

(Signed) JOS. SMITH.

Hon. WM. BALLARD PRESTON, *Secretary of the Navy.*

121 And these claimants further show, that no further action was then had by the department, and these claimants were allowed to proceed with the building of said dock, which these claimants promised to do for the reasons aforementioned.

And these claimants further show and allege, that said report of the Chief of the Bureau of Yards and Docks is erroneous in many respects, and does great and manifest injustice to these claimants, as will appear in and by their petition, and the proof ready to be submitted to this honorable court, and also in and by a letter from the said Hon. John Y. Mason, dated Feb. 17, 1853, and also in and by a letter from the Chief of the Bureau of Yards and Docks, dated Feb. 27, 1852, (see Ex. Doc. No. 44, Senate, 32d Congress, 1st session, page 75,) certified copies of which these claimants pray may be required to be produced by the Navy Department, and made a part of this petition.

"RICHMOND, VA., *Feb.* 17, 1853.

"MY DEAR SIR: In answer to your inquiries I addressed you a letter some months since in relation to the claim of certain contractors for coppering the floating dry dock at Kittery, Maine. I wrote that letter with the acts of Congress before me. I regret that it has been mislaid, and will endeavor to give you the substance. The act of Congress which required the Secretary of the Navy to contract with Messrs. Gilbert and Secor, and Messrs. Dakin and Moody, for their patented docks at Pensacola, Kittery, and Philadelphia, required of the department to conform, as to compensation, to the proposals of those parties respectively for structures at the several points named, which had been submitted to the department under a former act, which I did not consider gave me the authority to contract for the building of docks according to their respective patents. In the exercise of the discretion given, as Secretary of the Navy,
122 I selected Gilbert & Secor's plan for Kittery. In preparing the contract at the Bureau of Yards and Docks, the condition was inserted; that the work should be coppered. To this stipulation the patentees objected, unless an increase of compensation was provided to cover the expense of coppering. I regarded the coppering as essential to the permanency and durability of the dock, and refused to enlarge the compensation as the act did not appear to provide for it. The parties executed the contract under protest.

"After I was relieved from the duties of the department, I examined the subject more carefully than I had been enabled to do when I acted upon it. I was satisfied that I had imposed conditions on them which the law did not authorize. Their proposals, to which the act requiring the contract referred, did not embrace coppering. The price stipulated was that fixed according to their proposals for the work and materials specified therein, excepting for the increased dimensions, which the act, under which the contract was made, authorized the department to require and to compensate for. I am satisfied that I did them injustice, and believing that I had no right to impose on them the expense of coppering the structure without a

reasonable compensation, I am desirous of repairing my error and doing them justice. You may use this letter as you may think proper.

"I am very respectfully, your obed't serv't.

"J. Y. MASON.

"HENRY L. BROOKE, Esq."

BUREAU OF YARDS AND DOCKS, *February* 27, 1852.

SIR: In compliance with your direction of the 21st instant,
123 to furnish copies of the papers called for by the Senate's resolution of the 20th instant, I have the honor to transmit herewith copies of contracts under which the dry docks, basins, and railways have been or are now building at the navy yards at Kittery, Philadelphia, and Pensacola, together with a copy of a contract for the construction of a dry dock, without basin and railway, at San Francisco.

The contracts for the three first named docks, &c., were entered into under a mandatory clause in the act of Congress, approved August 3, 1848, which "directed" the Secretary of the Navy "forthwith" to contract with S. D. Dakin and Rutherford Moody, and with John S. Gilbert and Zeno Secor, &c., &c.

The contract for the dock at San Francisco was made under the act approved September 28, 1850.

No advertisement was issued by the department inviting proposals for the works above mentioned; Congress by the acts referred to, having named the parties with whom the contracts should be made.

I have the honor to be, with great respect, your obedient servant,

JOS. SMITH.

Hon. WILL. A. GRAHAM,
Secretary of the Navy, Washington.

And these claimants further show, that on the 17th February, 1853, the attention of Congress was called to this claim by the Hon. John P. Kennedy, then Secretary of the Navy, as will appear by the communication of said Secretary of the Navy, addressed to the chairman of the Committee on Naval Affairs of the Senate, certified copies of which these claimants pray may be required and made a part of this petition, which were in the words and figures to wit:

124 "NAVY DEPARTMENT, *February* 17*th*, 1853.

"SIR: I beg leave to submit to your consideration and to that of the Naval Committee, the claim of the partners and representatives of the late S. D. Dakin, which you will find stated in the report of Bureau of Yards and Docks of this department, which accompanies this note. It refers to a contract made by Mr. Dakin for the floating dry dock at Kittery, in the State of Maine, upon which a demand is made for the copper sheathing which it was found necessary to repair on that dock, over and above the requisition of the act of Congress which omitted to provide for the sheathing.

"You will perceive from the extract from Secretary Mason's letter

contained in this report, that he considered this demand for compensation as resting upon strong equitable grounds; and I have seen a letter from him since his retirement from this department which reiterates that opinion in still stronger terms. As the contract was made by him I defer very much to his view of it, and I beg to commend this subject to the examination of the committee that upon a favorable view of it, they may insert some proper clause of appropriation in the naval bill to meet the case, and provide for the payment of what they may think justly due to the contractors.

"Very respectfully, your obt. serv't,
(Signed) "JOHN P. KENNEDY.

"Hon. W. M. GWIN,
"*Chairman of the Naval Committee, Senate U. S.*"

"NAVY DEPARTMENT, *February* 21, 1853.

"SIR: In addition to the paper I sent you a few days ago,
125 the report of the Bureau of Yards and Docks on the subject of Messrs. Dakin & Secor's contract to build the floating dock at Kittery, in which a question arose upon a claim for sheathing the dock with copper, I now enclose you a letter recently written by Judge Mason, the former Secretary of the Navy, who made the contract, explaining his views of the justice of the claim. I beg that this letter may be taken into consideration in your deliberation upon the claim.

"Very respectfully, your obt. serv't,
(Signed) "JOHN P. KENNEDY.

"To the Hon. W. M. GWIN,
"*Chairman Naval Committee, Senate U. S.*"

"RICHMOND, VA., *Feb.* 17, 1853.

"MY DEAR SIR: In answer to your inquiries I addressed you a letter some months since in relation to the claim of certain contractors for coppering the floating dry dock at Kittery, Maine. I wrote that letter with the acts of Congress before me. I regret that it has been mislaid, and will endeavor to give you the substance. The act of Congress which required the Secretary of the Navy to contract with Messrs. Gilbert and Secor, and Messrs. Dakin and Moody, for their patented docks at Pensacola, Kittery, and Philadelphia, required of the department to conform as to compensation, to the proposals of those parties respectively for structures at the several points named, which had been submitted to the department under a former act, which I did not consider gave me the authority to contract for the building of docks according to their respective patents. In the exercise of the discretion given, as Secretary of the Navy, I selected Gibert & Secor's plan for Kittery. In preparing the contract at the Bureau of Yards and Docks, the condition was inserted that the
work should be coppered. To this stipulation the patent-
126 ees objected, unless an increase of compensation was provided to cover the expense of coppering. I regarded the coppering as essential to the permanency and durability of the dock, and refus-

ed to enlarge the compensation as the act did not appear to provide for it. The parties executed the contract under protest.

"After I was relieved from the duties of the department, I examined the subject more carefully than I had been enabled to do when I acted upon it. I was satisfied that I had imposed conditions on them which the law did not authorize. Their proposals to which the act requiring the contract referred, did not embrace coppering. The price stipulated was that fixed according to their proposals for the work and materials specified therein, excepting for the increased dimensions, which the act, under which the contract was made, authorized the department to require and to compensate for. I am satisfied that I did them injustice, and believing that I had no right to impose on them the expense of coppering the structure without a reasonable compensation, I am desirous of repairing my error and doing them justice. You may use this letter as you may think proper.

"I am very respectfully, your obedient servant,

"J. Y. MASON.

"HENRY L. BROOKE, Esq."

And these claimants further show, that the contract for the construction of the dock, basin and railways at Kittery, as entered in by these claimants as aforementioned and described, and for the causes and reasons aforesaid, was fully and faithfully performed and executed by these claimants, in accordance with its terms and stipulations, and that the additional expense of copper-sheathing and fastening the same amounts to the sum of seventy-two thousand seven hun-
127 dred and forty-two dollars and eighty-two cents ($72,742 82) as will more fully and at large appear by the following detailed statement:

The government of the United States, by the Secretary of the Navy, to Gilbert & Secor, contractors, Dr.

For floating dock at navy yard, Kittery, Maine:

For furnishing 32-oz. copper sheathing and composition nails for the same, copper bolting and composition clinch rings for the same, and composition spikes for planking.

First layer of the platform has two scarfs in each course, four ⅞-inch bolts in each scarf, 2 feet long, making 2,800 bolts, weighing 15,400 lbs., *a* 25 cts.....	$3,850 00
Second layer has 9 scarfs in each course, with four ⅞-inch bolts in each scarf, 2 feet long, making 3,744 bolts, weighing 20,592 lbs., *a* 25 cts.....	5,148 00
Third layer has 174 courses, each course has fifty-three ⅞-inch bolts, 3 feet 4 inches long, making 9,222 bolts, weighing 84,535 lbs., *a* 25 cts.....	21,133 75
Lower course of thick work at sides and ends is bolted one foot apart with ⅞-inch bolts, 2 feet 6 inches long, making 908 bolts, weighing 6,243 lbs., *a* 25 cts.....	1,560 75
Centre keelson, 525 bolts, ⅞-inch, 4 feet 8 inches long, weighing 6,726 lbs., *a* 25 cts.....	1,681 50

Six courses of thick work all round, 24 scarfs in each course, with four bolts in each scarf, 2 feet long, making 576 bolts, weighing 3,168 lbs., *a* 25 cts	$792 00	
		34,166 00
128 Amount brought over, $34,166 00		
Stringers at the heels of outer ribs, 348 1-inch bolts, 4 feet 8 inches long, weighing 5,694 lbs., *a* 25 cts.	1,423 50	
Sill pieces for gates, 140 1-inch bolts, 3 feet 6 inches long, weighing 1,718 lbs., *a* 25 cts	429 50	
Bits at the ends of gates, 44 1-inch bolts, 4 feet 6 inches long, weighing 694 lbs., *a* 25 cts	173 50	
Amount brought over, $35,192 50		
Gate rollers, 160 $\frac{7}{8}$-inch bolts, 1 foot 6 inches long, weighing 660 lbs., *a* 25 cts	165 00	
Posts at the end of the dock, 120 1-inch bolts, 3 feet long, weighing 1,262 lbs., *a* 25 cts	315 50	
Six feet of planking all round the dock, including gates, 3,000 9-inch composition spikes, weighing 3,000 lbs., *a* 23 cts	690 00	
18,447 composition clinch rings, 2,050 lbs., *a* 26 cts	533 00	
13,000 sheets of 32-oz. copper, weighing 117,000 lbs., *a* 25 cts	29,250 00	
Composition nails for sheathing copper, 31,418 lbs., *a* 32 cts	6,911 96	
For boat gate:		
928 sheets 24-oz. copper, weighing 6,496 lbs., *a* 25 cts	1,624 00	
1,800 lbs. nails, *a* 22 cts	396 00	
2,085 lbs. of copper bolts for bolting stems, aprons, keel, keelson, and butt bolts, *a* 25 cts	521 25	
620 lbs. 7-inch composition spikes, for planking, *a* 23 cts.	142 60	
		76,741 81
129 Amount brought over, $76,741 81		
In the above calculation a small allowance has been made in the length of each bolt for the "upset" in driving and for clinching.		
Or.		
For iron fastening and sheathing of wood, as specified in our proposals under the act of Congress 3d August, 1848:		
66 tons, 8 cwt., 1 qr., 13 lbs. refined iron, *a* $45	$2,988 82	
46,000 feet sheathing boards, *a* $15	690 00	
8,000 lbs. nails, *a* 4 cts	320 00	
		3,998 82
		72,742 82

And these claimants further show that, by reason of the illegal and unjust exaction of the Secretary of the Navy in forcing these claimants, for the reasons and causes aforementioned, they were put to said costs and damages aforesaid of seventy-two thousand seven hundred and forty-two dollars and eighty-two cents, ($72,742 82;) and they respectfully submit that the same was done at the instance and request of said Secretary of the Navy, whereby they expended said seventy-two thousand seven hundred and forty-two dollars and eighty-two cents, ($72,742 82,) under his orders and directions; that they should be allowed interest on said sum of seventy-two thousand seven hundred and forty-two dollars and eighty-two cents ($72,742 82) from the time of said expenditure.

And these claimants further show that, by reason of said Secretary of the Navy's departure from the original proposals of these claimants, they were put to great expense and expenditure of money not contemplated in the original proposals or authorized by said
130 act of Congress aforesaid, whereby they sustained great damage, to wit, the ten thousand dollars, a detailed statement of which will be filed, and these claimants pray may be made a part of this petition.

And these claimants further show that these claimants, John S. Gilbert and Zeno Secor, are the only parties who have a direct interest in this claim; and that in and by a certain agreement, which will be filed and made a part of this petition, these claimants agreed with S. D. Dakin, in his lifetime, and Rutherford Moody, in his lifetime, that of and from the profits arising from the construction of said Kittery dock they would, for certain good considerations to them paid and performed, pay to them, when they shall receive the same, to each one quarter of the profits; and that James C. Holdane, by purchase of Mary P. Dakin, executrix, &c., and of Samel D. Dakin, deceased, became the owner of all the interest of Samuel D. Dakin, deceased; and that said James C. Holdane assigned all of said interest of said Samuel D. Dakin, deceased, to Courtlandt Palmer, who is now the owner thereof, as in and by a certified copy of letters testamentary granted to Mary P. Dakin, executrix, &c., of the estate of Samuel D. Dakin, deceased, hereto annexed, marked Exhibit A, and in and by said assignment of said Mary P. Dakin, executrix, &c., of Samuel D. Dakin, deceased, to James C. Holdane, and also in and by said assignment made by James C. Holdane to Courtlandt Palmer, hereto annexed, marked Exhibit B, will more fully and at large appear.

And these claimants further show that Eunice P. Moody, as administratrix, and Courtlandt Palmer, administrator, jointly, of the estate of Rutherford Moody, deceased, are the legal representatives of Rutherford Moody, deceased, as in and by a certified copy of
131 said letters of administration hereto annexed, marked Exhibit C, will more fully and at large appear.

And these claimants further show that James F. Secor and Charles A. Secor have an equitable interest in the interest of Zeno Secor, of

one-third each, as, in, and by the proof ready to be submitted to this honorable court will appear.

Therefore these claimants respectfully submit to the honorable court that the United States are justly indebted to them in the sum of ten thousand dollars, for and on account of the difference and alteration by the Secretary of the Navy in said proposals, plans, and specifications submitted by these claimants, and hereinbefore more particularly set forth, and the sum of seventy-two thousand seven hundred and forty-two dollars and eighty-two cents ($72,742 82) for the coppering of said dock.

And these claimants also respectfully submit that by reason of the aforementioned acts and doings they have been obliged to submit to great expense, loss, and damages, and large expenditure of money and time, and that under the circumstances aforesaid mentioned, and having expended this money by order of the Secretary of the Navy, that they should be allowed interest thereon—ten thousand dollars from the 13th day of March, 1852, that being the day the dock was completed, and also on seventy-two thousand seven hundred and forty-two dollars and eighty-two cents ($72,742 82) from said 13th day of March, 1852, and such actual costs and disbursements that they have been obliged to make in and about the prosecution
132 of this claim, which they pray may be ascertained and allowed to them by way of damages that they have sustained.

JAMES D. STEVENSON,
Solicitor for Claimants, 212 Broadway, New York.
JAMES M. CARLISLE,
Counsel for Claimants, Washington, D. C.

Post office address of the claimants, New York city.

UNITED STATES OF AMERICA,
City, County, and State of New York, ss:

John S. Gilbert, one of the claimants above named, being duly sworn, deposes and says that no assignment or transfer of said claim or any part thereof, or any interest therein, has been made, except as in said petition stated; that said claimants are justly entitled to the amount therein claimed from the United States, after allowing all just credits and offsets, and that deponent believes the facts as stated in said petition are true.

JOHN S. GILBERT.

Sworn to before me this 23d day of June, 1863.

CLINTON RICE,
Com'r U. S. Court of Claims in New York.

[U. S. int. rev. stamp, 5 cents, canc'l'd.

133 EXHIBIT A.

The people of the State of New York, by the grace of God free and independent, to all to whom these presents shall come or may concern, send greeting:

Know ye that at the county of New York on the twenty-third day of March, in the year of our Lord one thousand eight hundred and fifty-three, before A. W. Bradford, esquire, surrogate of our said county, the last will and testament of Samuel D. Dakin, deceased, was proved, and is now approved, and allowed by us; and the said Samuel D. Dakin being, at or immediately previous to his death, an inhabitant of the county of New York, by means whereof the proving and registering said will and the granting administration of all and singular the goods, chattels, and credits of the said testator, and also the auditing, allowing, and final discharging the account thereof doth belong unto us the administration of all and singular the goods, chattels, and credits of the said deceased, and any way concerning his will, is granted unto Mary P. Dakin, of the city of New York, executrix in the said will named, she being first duly sworn faithfully and honestly to discharge the duties of such execution.

In testimony whereof we have caused the seal of office of our said surrogate to be hereunto annexed.

Witness A. W. Bradford, esq., surrogate of our said county, at the city of New York, the twenty-third day of March, in the year of our Lord one thousand eight hundred and fifty-three, and of our independence the seventy-seventh.

[L. S.] A. W. BRADFORD, *Surrogate.*

134 STATE AND COUNTY OF NEW YORK, *ss:*

SURROGATE'S OFFICE.

I, John T. Cornell, clerk to the surrogate's court of said county, do hereby certify that I have compared the foregoing copy of letters testamentary, granted upon the estate of Samuel D. Dakin, deceased, with the original record thereof now remaining in this office, and have found the same to be a correct transcript therefrom and of the whole of such original record.

In testimony whereof I have hereunto set my hand and affixed the seal of office of said surrogate, this 15th day of June, in the year of our Lord one thousand eight hundred and sixty-three, and of our independence the eighty-seventh.

[L. S.] JOHN T. CORNELL,
Clerk to the Surrogate's Court.

[U. S. int. rev. stamp, 5 cts, cancel'd.]

EXHIBIT B.

Know all men by these presents that I, Mary P. Dakin, executrix of the last will and testament of the late Samuel D. Dakin, deceased, for and in consideration of five dollars, to me in hand paid by James

C. Holdane, of the city of New York, the receipt whereof is hereby acknowledged, have sold, assigned, and transferred, and hereby do sell, assign, and transfer, unto the said James C. Holdane, all the interest which at the date of these presents the estate of said late Samuel D. Dakin has in a claim on the United States government, on account of contracts for dry docks, basins, and railways at Kittery,
Pensacola, and Philadelphia; to have and to hold such inter-
135 est unto the said James C. Holden and his representatives to and for his own use and at his own risk.

In witness whereof I have hereunto set my hand and seal this thirteenth day of November, one thousand eight hundred and fifty-four.

MARY P. DAKIN,
Executrix, &c., of Samuel D. Dakin, dec'd.

Sealed and delivered in the presence of—
CHAS. GOULD.

For value received, I hereby assign to Courtlandt Palmer all the rights, interest, and property above transferred to me, and I convey the same to him for his own use as fully and perfectly as the same are above conveyed to me.

JAMES C. HOLDANE.

New York, November 28th, 1854.

Sealed and delivered in the presence of—
T. P. PROCTOR.

CITY AND COUNTY OF NEW YORK, *ss:*

On this seventh day of December, A. D. 1854, before me, came Charles Gould, known to me to be the subscribing witness to the within instrument, and being by me duly sworn, did depose and say that he resides in the city of New York; that he knows Mary P. Dakin, the
person described in and who executed the said instrument; that
136 the said Mary P. Dakin executed the same in his, deponent's, presence, and acknowledged the execution thereof, and that thereupon he subscribed his name as a witness thereto.

GILBERT S. NIXON,
Comm'r of Deeds.

CITY AND COUNTY OF NEW YORK, *ss:*

On this fifteenth day of December, A. D. 1854, before me came T. P. Proctor, known to me to be the subscribing witness to the within instrument, and being by me duly sworn, did depose and say that he resides in the city of New York; that he knows James C. Holdane, the person described in and who executed the said instrument; that the said James C. Holdane executed the said instrument in his, deponent's, presence, and acknowledged the execution thereof, and that thereupon he subscribed his name as a witness thereto.

GILBERT S. NIXON,
Comm'r of Deeds.

STATE OF NEW YORK, *City and County of New York, ss:*

I, Henry W. Genet, clerk of the city and county of New York, and also clerk of the supreme court for the said city and county, the same being a court of record, do hereby certify that Gilbert
137 S. Nixon, whose name is subscribed to the certificate of the proof or acknowledgment of the annexed instrument, and thereon written, was, at the time of taking such proof or acknowledgment, a commissioner of deeds in and for the city and county of New York, dwelling in the said city, commissioned and sworn, and duly authorized to take the *the* same. And further, that I am well acquainted with the handwriting of such commissioner, and verily believe that the signature to the said certificate of proof or acknowledgment is genuine. I further certify that said instrument is executed and acknowledged according to the law of the State of New York.

In testimony whereof I have hereunto set my hand and affixed the seal of the said court and county, the 15th day of June, 1863.

[L. S.] H. W. GENET, *Clerk.*

[U. S. int. rev. stamp, 5 cents, canc'l'd.]

138 EXHIBIT C.

The people of the State of New York to Eunice P. Moody, of the city of New York, the widow of Rutherford Moody, deceased, and Courtlandt Palmer, of the said city of New York, jointly send greeting:

Whereas said Rutherford Moody lately departed this life intestate, being at or immediately previous to his death an inhabitant of the county of New York, by means whereof the ordering and granting administration of all and singular the goods, chattels, and credits whereof the said intestate died possessed, in the State of New York, and also the auditing, allowing, and final discharging the account thereof, doth appertain unto us, and we being desirous that the goods, chattels, and credits of the said intestate may be well and faithfully administered, applied, and disposed of, do grant unto you, the said Eunice P. Moody and Courtlandt Palmer, jointly, full power by these presents to administer and faithfully dispose of all and singular the said goods, chattels, and credits; to ask, demand, recover, and receive the debts which, unto the said intestate whilst living, and at the time of his death did belong; and to pay the debts which the said intestate did owe, as far as such goods, chattels, and credits will thereunto extend and the law require; hereby requiring you to make, or cause to be made, a true and perfect inventory of all and singular the goods, chattels, and credits of the said intestate within a reasonable time, and return a duplicate thereof to our surrogate of the county of New York, within three months from the date of these presents; and if further personal property or assets of any kind not mentioned in any inventory that shall have been so made shall come to your possession or knowledge, to make or cause to be made in like manner a true and perfect inventory thereof, and return the same

one-third each, as, in, and by the proof ready to be submitted to this honorable court will appear.

Therefore these claimants respectfully submit to the honorable court that the United States are justly indebted to them in the sum of ten thousand dollars, for and on account of the difference and alteration by the Secretary of the Navy in said proposals, plans, and specifications submitted by these claimants, and hereinbefore more particularly set forth, and the sum of seventy-two thousand seven hundred and forty-two dollars and eighty-two cents ($72,742 82) for the coppering of said dock.

And these claimants also respectfully submit that by reason of the aforementioned acts and doings they have been obliged to submit to great expense, loss, and damages, and large expenditure of money and time, and that under the circumstances aforesaid mentioned, and having expended this money by order of the Secretary of the Navy, that they should be allowed interest thereon—ten thousand dollars from the 13th day of March, 1852, that being the day the dock was completed, and also on seventy-two thousand seven hundred and forty-two dollars and eighty-two cents ($72,742 82) from said 13th day of March, 1852, and such actual costs and disbursements that they have been obliged to make in and about the prosecution
132 of this claim, which they pray may be ascertained and allowed to them by way of damages that they have sustained.

JAMES D. STEVENSON,
Solicitor for Claimants, 212 *Broadway, New York.*
JAMES M. CARLISLE,
Counsel for Claimants, Washington, D. C.

Post office address of the claimants, New York city.

UNITED STATES OF AMERICA,
City, County, and State of New York, ss:

John S. Gilbert, one of the claimants above named, being duly sworn, deposes and says that no assignment or transfer of said claim or any part thereof, or any interest therein, has been made, except as in said petition stated; that said claimants are justly entitled to the amount therein claimed from the United States, after allowing all just credits and offsets, and that deponent believes the facts as stated in said petition are true.

JOHN S. GILBERT.

Sworn to before me this 23d day of June, 1863.
CLINTON RICE,
Com'r U. S. Court of Claims in New York.

[U. S. int. rev. stamp, 5 cents, canc'l'd.

133 EXHIBIT A.

The people of the State of New York, by the grace of God free and independent, to all to whom these presents shall come or may concern, send greeting:

Know ye that at the county of New York on the twenty-third day of March, in the year of our Lord one thousand eight hundred and fifty-three, before A. W. Bradford, esquire, surrogate of our said county, the last will and testament of Samuel D. Dakin, deceased, was proved, and is now approved, and allowed by us; and the said Samuel D. Dakin being, at or immediately previous to his death, an inhabitant of the county of New York, by means whereof the proving and registering said will and the granting administration of all and singular the goods, chattels, and credits of the said testator, and also the auditing, allowing, and final discharging the account thereof doth belong unto us the administration of all and singular the goods, chattels, and credits of the said deceased, and any way concerning his will, is granted unto Mary P. Dakin, of the city of New York, executrix in the said will named, she being first duly sworn faithfully and honestly to discharge the duties of such execution.

In testimony whereof we have caused the seal of office of our said surrogate to be hereunto annexed.

Witness A. W. Bradford, esq., surrogate of our said county, at the city of New York, the twenty-third day of March, in the year of our Lord one thousand eight hundred and fifty-three, and of our independence the seventy-seventh.

[L. S.] A. W. BRADFORD, *Surrogate.*

134 STATE AND COUNTY OF NEW YORK, *ss:*

SURROGATE'S OFFICE.

I, John T. Cornell, clerk to the surrogate's court of said county, do hereby certify that I have compared the foregoing copy of letters testamentary, granted upon the estate of Samuel D. Dakin, deceased, with the original record thereof now remaining in this office, and have found the same to be a correct transcript therefrom and of the whole of such original record.

In testimony whereof I have hereunto set my hand and affixed the seal of office of said surrogate, this 15th day of June, in the year of our Lord one thousand eight hundred and sixty-three, and of our independence the eighty-seventh.

[L. S.] JOHN T. CORNELL,
Clerk to the Surrogate's Court.

[U. S. int. rev. stamp, 5 cts, cancel'd.]

EXHIBIT B.

Know all men by these presents that I, Mary P. Dakin, executrix of the last will and testament of the late Samuel D. Dakin, deceased, for and in consideration of five dollars, to me in hand paid by James

C. Holdane, of the city of New York, the receipt whereof is hereby acknowledged, have sold, assigned, and transferred, and hereby do sell, assign, and transfer, unto the said James C. Holdane, all the interest which at the date of these presents the estate of said late Samuel D. Dakin has in a claim on the United States government, on account of contracts for dry docks, basins, and railways at Kittery, Pensacola, and Philadelphia; to have and to hold such inter-
135 est unto the said James C. Holden and his representatives to and for his own use and at his own risk.

In witness whereof I have hereunto set my hand and seal this thirteenth day of November, one thousand eight hundred and fifty-four.

MARY P. DAKIN,
Executrix, &c., of Samuel D. Dakin, dec'd.

Sealed and delivered in the presence of—
CHAS. GOULD.

For value received, I hereby assign to Courtlandt Palmer all the rights, interest, and property above transferred to me, and I convey the same to him for his own use as fully and perfectly as the same are above conveyed to me.

JAMES C. HOLDANE.

New York, November 28th, 1854.

Sealed and delivered in the presence of—
T. P. PROCTOR.

CITY AND COUNTY OF NEW YORK, *ss:*

On this seventh day of December, A. D. 1854, before me, came Charles Gould, known to me to be the subscribing witness to the within instrument, and being by me duly sworn, did depose and say that he resides in the city of New York; that he knows Mary P. Dakin, the person described in and who executed the said instrument; that
136 the said Mary P. Dakin executed the same in his, deponent's, presence, and acknowledged the execution thereof, and that thereupon he subscribed his name as a witness thereto.

GILBERT S. NIXON,
Comm'r of Deeds.

CITY AND COUNTY OF NEW YORK, *ss:*

On this fifteenth day of December, A. D. 1854, before me came T. P. Proctor, known to me to be the subscribing witness to the within instrument, and being by me duly sworn, did depose and say that he resides in the city of New York; that he knows James C. Holdane, the person described in and who executed the said instrument; that the said James C. Holdane executed the said instrument in his, deponent's, presence, and acknowledged the execution thereof, and that thereupon he subscribed his name as a witness thereto.

GILBERT S. NIXON,
Comm'r of Deeds.

STATE OF NEW YORK, *City and County of New York, ss:*

I, Henry W. Genet, clerk of the city and county of New York, and also clerk of the supreme court for the said city and county, the same being a court of record, do hereby certify that Gilbert
137 S. Nixon, whose name is subscribed to the certificate of the proof or acknowledgment of the annexed instrument, and thereon written, was, at the time of taking such proof or acknowledgment, a commissioner of deeds in and for the city and county of New York, dwelling in the said city, commissioned and sworn, and duly authorized to take the *the* same. And further, that I am well acquainted with the handwriting of such commissioner, and verily believe that the signature to the said certificate of proof or acknowledgment is genuine. I further certify that said instrument is executed and acknowledged according to the law of the State of New York.

In testimony whereof I have hereunto set my hand and affixed the seal of the said court and county, the 15th day of June, 1863.

[L. S.] H. W. GENET, *Clerk.*

[U. S. int. rev. stamp, 5 cents, canc'l'd.]

138 EXHIBIT C.

The people of the State of New York to Eunice P. Moody, of the city of New York, the widow of Rutherford Moody, deceased, and Courtlandt Palmer, of the said city of New York, jointly send greeting:

Whereas said Rutherford Moody lately departed this life intestate, being at or immediately previous to his death an inhabitant of the county of New York, by means whereof the ordering and granting administration of all and singular the goods, chattels, and credits whereof the said intestate died possessed, in the State of New York, and also the auditing, allowing, and final discharging the account thereof, doth appertain unto us, and we being desirous that the goods, chattels, and credits of the said intestate may be well and faithfully administered, applied, and disposed of, do grant unto you, the said Eunice P. Moody and Courtlandt Palmer, jointly, full power by these presents to administer and faithfully dispose of all and singular the said goods, chattels, and credits; to ask, demand, recover, and receive the debts which, unto the said intestate whilst living, and at the time of his death did belong; and to pay the debts which the said intestate did owe, as far as such goods, chattels, and credits will thereunto extend and the law require; hereby requiring you to make, or cause to be made, a true and perfect inventory of all and singular the goods, chattels, and credits of the said intestate within a reasonable time, and return a duplicate thereof to our surrogate of the county of New York, within three months from the date of these presents; and if further personal property or assets of any kind not mentioned in any inventory that shall have been so made shall come to your possession or knowledge, to make or cause to be made in like manner a true and perfect inventory thereof, and return the same

within two months after the discovery thereof, and also to
139 render a just and true account of administration when thereunto required; and we do, by these presents, depute, constitute, and appoint you, the said Eunice P. Moody and Courtlandt Palmer, jointly, administrator and administratrix of all and singular the goods, chattels, and credits of the said Rutherford Moody, deceased.

In testimony whereof we have caused the seal of office of the surrogate of said county to be hereunto affixed. Witness, Edward C. West, surrogate of said county, at the city of New York, the fourteenth day of May, in the year of our Lord one thousand eight hundred and sixty-one, and of our independence the eighty-fifth.

[L. S.] EDWARD C. WEST, *Surrogate.*

STATE AND COUNTY OF NEW YORK, *ss:*

SURROGATE'S OFFICE.

I, John T. Cornell, clerk to the surrogate's court of said county, do hereby certify that I have compared the foregoing copy of letters of administration granted upon the estate of Rutherford Moody, deceased, with the original record thereof, now remaining in this office, and have found the same to be a correct transcript therefrom, and of the whole of such original record.

In testimony whereof I have hereunto set my hand and affixed the seal of office of said surrogate, this 15th day of June, in the year of our Lord one thousand eight hundred and sixty-three, and of our independence the eighty-seventh.

[L. S.] JOHN T. CORNELL,
Clerk to the Surrogate's Court.

[U. S. int. rev. stamp, 5 cents, canc'l'd.]

140 United States Court of Claims, October term, 1863.

JOHN S. GILBERT and ZENO SECOR
vs.
THE UNITED STATES.

And now come the said United States, by Charles Gibson, their solicitor, and say that the petition is not sufficient in law.

And the said United States show to the court here the following causes of demurrer to the said petition:

1st. That whereas the petitioners declare, upon an implied promise of the United States, to pay for work and labor done and materials furnished, at the request of the United States, upon a [illegible]ance dry dock, built under an act of Congress, approved August 3d, 1848, (Pet., p. 74.) Now the United States say, it appears by said petition, that the work and labor were done, and the materials furnished by the petitioners, in the performance of a contract under seal, made by the petitioners with the United States, and in consideration of covenants therein contained on the part of the United States, and no breach of said covenants is alleged in the said petition.

2d. And whereas the said petitioners, in order to avoid so much of the contract under seal, above referred to, as requires of them the work and labor and materials now made the subject of claim against the United States, aver that the Secretary of the Navy, without authority of law, unjustly imposed the obligations upon them. Now the United States say that it sufficiently appears by the petition that the Secretary of the Navy was authorized by the acts of March 3, 1847, and August 3, 1848, to require the petitioners to furnish such work, labor, and materials, in consideration of the covenants entered into by the United States, and that he did so require them, and the United States, by the contract so made, expressly promised to pay for said work, labor, and materials the price agreed upon and fixed by said contract, and the petition alleges no breach of such promise.

CHARLES GIBSON, *Sol.*
By J. D. McPHERSON, *Ass't.*

141 In the Court of Claims.

JOHN S. GILBERT and ZENO SECOR
vs.
THE UNITED STATES.

And now to wit, January 27th, 1864, the court upon due consideration of the premises, do sustain the said demurrer, and do further order, adjudge, and decree that the said petition be dismissed by the court.

142 In the U. S. Court of Claims.

JOHN S. GILBERT and ZENO SECOR
vs.
THE UNITED STATES.

To the Court of Claims:

Your petitioners, the claimants in the above-entitled cause, pray the allowance of an appeal to the Supreme Court of the United States from the judgment of this court in this cause, and that this court will certify to the said Supreme Court the following points, decided by this court in its ruling and judgment in said cause, to wit:

Whereas it is averred in the petition in said cause that Congress, by an act approved March 3, 1847, directed the construction of floating dry docks at the navy yards at Pensacola, Florida, Philadelphia, Pennsylvania, and Kittery, Maine, and the secretary of the navy, with a view to the execution of the said act, requested from these claimants, and from other persons, proposals for constructing said dry docks with basins and railways.

That these claimants and others submitted to the Navy Department plans and specifications for said docks with basins and railways, and the prices for said docks, basins, and railways.

That the said plans and specifications were submitted to a board of

officers appointed to examine and report upon the same; and the said board and the Bureau of Yards and Docks made reports thereon, which were afterwards communicated to Congress.

143 That Congress thereafter passed an act, approved August 3, 1848, which enacted, among other things, as follows:

"SEC. 3. *And be it further enacted*, That in the execution of the act approved March third, eighteen hundred and forty-seven, making appropriations for the naval service, &c., for the year ending the thirtieth of June, eighteen hundred and forty-eight, directing among other things the construction of floating dry docks at the navy yards at Philadelphia, Pensacola, and Kittery, and in pursuance of the reports in favor of the two plans hereinafter named as best adapted to naval purposes, made by a board of officers appointed to examine all the plans, and by the Bureau of Yards and Docks, the Secretary of the Navy is hereby directed forthwith to enter into a contract with Samuel D. Dakin and Rutherford Moody, for the complete construction, within a reasonable time from the date of the contract, of a sectional floating dry dock, basin, and railways at the navy yard at Philadelphia, according to the plan and specifications submitted by them to the Navy Department; and also to enter into a contract with John S. Gilbert and Zeno Secor for the complete construction, within a reasonable time from the date of the contract, of a balance floating dry dock, basin, and railways at the navy yard at Pensacola, according to the plan and specifications submitted by them to the Navy Department; and also to enter into a contract with one or the other of the respective parties above named, for the complete construction, within a reasonable time from the date of the contract, at the navy yard at Kittery, of a floating dry dock, basin, and railways, upon either of the above-named plans that the said Secretary may prefer as best adapted to said yard; the said works at each yard to be of the largest dimensions proposed in said plans and specifications: *Provided*, that in each case such contract can be made at prices that shall not exceed by more than ten per cent. the prices which have been submitted by either of the said proprietors to the Navy Department for a floating dry dock on either of said plans and for the basin and railways of the dimensions aforesaid, at any of said navy yards: *and provided further*, that the said Secretary shall also, by further contract with said parties, enlarge the dimensions of said works at each yard to a capacity sufficient for docking war steamers of the largest class, at least three hundred and fifty feet in length, if the dimensions above mentioned should not be found adequate for that purpose."

144 That the Secretary of the Navy selected the balance floating dry dock, with basin and railways, of these claimants to be constructed at Kittery, Maine, but refused to enter into a contract with them to construct the same unless they would bind themselves to copper the said dock, although, in fact, the plans and specifications submitted by them for the dry dock at Kittery, Maine, did not propose to copper said dock, but on the contrary these claimants in submitting the said plans and specifications had expressly proposed

not to copper the said dock, but to cover it with felt and tarred sheathing.

That these claimants thereupon and in consequence of the refusal of the said Secretary otherwise to contract, did bind themselves to copper said dock by the contract entered into between them and the Navy Department on the 11th of November, 1848, and set forth in the petition.

That these claimants constructed the said dock, basin, and railways, and coppered the said dock, and received the money stipulated to be paid by the said contract of November 11, 1848, and now seek further to recover from the United States the value of the work and materials furnished by them in coppering the said dock, or the money expended by them in furnishing the materials and executing the work of coppering the said dock.

And thereupon the court ruled that the claimants were not entitled to any relief, and that their petition should be dismissed.

And the said claimants now assign for error in the said ruling and judgment; that, upon the facts set forth in the petition, the claimants are entitled to be paid for the work and materials by them furnished in coppering the said dock, so much as the same may be reasonably worth.

J. D. STEVENSON,
Solicitor for Claimants.
C. CUSHING,
CARLISLE & McPHERSON,
Of Counsel.

145 In the Court of Claims.

JOHN S. GILBERT and ZENO SECOR
vs
THE UNITED STATES.

I, Sam'l H. Huntington, chief clerk of the Court of Claims, do hereby certify that the foregoing is a true transcript of the pleadings in the above-entitled case, and of the judgment of the court thereon, with the petition of the claimant for the allowance of an appeal annexed as certified by the court.

In testimony whereof, I have hereunto set my hand and affixed the seal of said court at Washington, this 28th day of June, A. D. 1866.

SAM'L H. HUNTINGTON,
Chief Clerk Court of Claims.

Attest: JOS. CASEY, *Ch. J. Ct. of Cl.*